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ENDOCRINOLOGY AND THE UNDERSTANDING AND TREATMENT OF THE EXCEPTIONAL CHILD

LOUIS A. LURIE, M.D.

Director of the Child Guidance Home and Assistant Professor of Psychiatry, University of Cincinnati College of Medicine

CINCINNATI

The trend at present in child guidance work is apparently toward the psychologic or, more specifically, toward the psychoanalytic interpretation of behavior disorders in children. A glance at the literature on the subject of orthogenics is more than sufficient to convince the most skeptical that the problems of maladjusted, unadjusted, antisocial and asocial children are apparently all on the basis of emotional conflicts, conflicts due to infantile fixations, sexual repressions, maternal rejections and sibling rivalry. Apparently, human behavior can be explained only in terms of suppressions, frustrations, rejections, identifications, feelings of hostility, feelings of inferiority and inadequacy and the like.

That these conflicts are potent and frequent factors in the causation of abnormal behavior no one can deny; neither will any one deny that the psychologic approach to the study of human behavior has been fruitful of great results. On the other hand, it must also be admitted that not all human reactions are merely conditioned emotional responses. Many reactions are conditioned by other factors, such as somatic, endocrine and neurologic conditions. Organic factors may and do have a vital part in producing types of behavior that are inefficient, inadequate and abnormal.

The environmentalist, with his social approach to the study of the problem child, was the first to supplant the organicist, and now he in turn is being supplanted by the psychologist and the psychoanalyst. Each one, as he supplants the other, does not deny him entirely but nevertheless relegates him to a minor position.

Is such an attitude the proper one? Is this the path which persons entrusted with child guidance should follow?

If one pauses for a moment and defines what is meant by human behavior, one soon realizes that the answer to these questions must be in the negative.

Human behavior is the resultant of the interaction between the individual and his environment. In the words of Herbert Spencer, "Life is the adjustment of inner to outer relations." This constant adjustment and readjustment is the process of living. Life expresses itself in conduct or behavior; hence, if one is to understand human behavior either in its normal or in its abnormal phases, one must study in detail both the individual and his environment. Furthermore, it must be realized that man is more than a biologic organism; he is also a social being, growing and adapting himself to a specific environment. Hence, fully to understand human behavior one must study the individual as a psychophysical organism that is attempting to adjust to a specific environment. This is what is meant by the psychobiologic approach to the study of human behavior.

When such a well rounded approach is employed, rather surprising facts regarding the relative frequency of organic, psychologic and environmental factors in the causation of behavior disorders are elicited.

For example, the statistics of the Child Guidance Home in Cincinnati show that in 49 per cent of the cases of behavior disorders studied the underlying causative factors were found to be endogenous, or psychophysical, in origin. In only 23 per cent of the cases were the causes exogenous, or environmental. In the remaining 28 per cent, both endogenous and exogenous factors were responsible for the behavior difficulties.

Furthermore, in approximately 75 per cent of the cases in the endogenous group the causes were organic. Psychologic factors as the primary cause constituted only a relatively small percentage. This finding is of especial importance in view of the present tendency to stress the psychologic approach in the study of behavior disorders in children.

The successful child guider is he who understands that the total integrated personality is a composite of the totality of the individual, that is, soma and psyche, plus the totality of the environmental situation. In other words, the molding of the personality is the resultant of the interactions of two dynamic systems, namely, a psychologic organism and a socio-economic physicochemical environment, working conjointly to produce in the child a type of reaction that gives him his distinctive personality. These two dynamic systems are composed of numerous separate component parts, each of which is capable of changing or modifying the personality. It is hardly necessary to point out the effect of climate, geographic location, economic status and many other environmental factors on the personality. Likewise, every physician is acquainted with the devastating effects of such diseases as encephalitis on the personality make-up. Furthermore, the work of Stockard, Kretschmer and others has demonstrated that certain patterns of abnormal behavior may conform with certain types of physical structure or constitution. Similarly, the endocrine glands have their part in the determination of the pattern types of behavior.

Read at the Fourth Institute on the Exceptional Child, "New Contributions of Science to the Exceptional Child," held under the auspices of the Child Research Clinic of the Woods Schools, Langhorne, Pa., Oct. 26, 1937.

An analysis of the first thousand cases of behavior disorders in children studied at the Child Guidance Home in Cincinnati showed that endocrine disturbances of various types and degrees of severity were present in approximately 20 per cent. In approximately 10 per cent of the cases the glandular disturbances were the principal causative factors. In other words, in about 100 cases of this series there was apparently a direct etiologic relationship between the endocrinopathy and the behavior difficulty presented by the child. For this reason, as far back as 1927, I said that "no examination of a problem child can be considered complete unless a careful endocrine study has been included." [1]

Why such a study is essential is readily understandable when one realizes the importance of the glands of internal secretion in the growth and development of the child. The influence of the endocrine glands starts, in fact, long before birth. The potentialities which the infant brings into the world have in a large measure been developed as a result of hormonal influence on the fetus in utero.

It is safe to say that hardly a single bodily function is not directly or indirectly influenced by these glands. They are concerned with differentiation of tissue, with nutrition and growth, with sexual activity and with mental development. In brief, they are bound up with all development, physical as well as mental.

Gigantism and dwarfism are the results of opposite extremes of functioning of the pituitary gland. Sexual infantilism may be due to deficiency in the secretion of the sex hormone of the same gland. On the other hand, this condition may be produced through failure of function of the sex glands themselves. Every gland of internal secretion, as a result either of overactivity or of underactivity, can modify the growth and functioning of the various tissues and organs of the body.

When one attempts to correlate specific forms of endocrine disorders with definite types of personality disturbances, it is essential to clarify the situation by first recognizing that the effects of endocrine dysfunction on the personality are of two kinds. The effects may be classified as (1) direct and (2) indirect.

It is well known that the mental retardation of the cretin is due to lack of thyroid hormone. Hypoparathyroidism may lead to great irritability, restlessness, emotional instability and even to a hypomanic state, while the opposite condition, hyperparathyroidism, may lead to sluggishness, a depressed emotional state and great mental apathy. In conditions of hyperinsulinism, mental symptoms are frequently present. These may vary from vague neurotic complaints to mild psychotic manifestations. They represent the direct effects of the endocrine dysfunction on the personality.

In addition to the effects just described, there may be indirect effects. These include the mental attitude that the child adopts toward the physical abnormality produced by the glandular malfunction. The abnormality often produces emotional conflicts of great severity, with resultant marked personality changes and abnormal behavior.

The indirect effects are of tremendous significance, as they often determine the child's outlook on life and furnish the motif for his behavior.

If one bears this in mind it is not difficult to understand why the adolescent boy who is suffering from eunuchoidism as a result of gonadal insufficiency should have a marked feeling of inferiority, which in turn leads him to shun his companions, to become morose and gradually to withdraw from the world of reality and live in a world of fantasy. For the same reason, the girl whose face is disfigured because of a growth of coarse hair as a result of an adrenocortical involvement may become so intensely self conscious and morbid that she attempts suicide.

One must recognize not only the effects of hormone dysfunction on the mood, thought and behavior but also the reactions of the child to the knowledge that he is suffering from a disturbed bodily function. The former constitute the direct effects, the latter the indirect effects. Some children may show only one type of disturbance or effect, but most often both types are present.

The failure to distinguish between the direct and the indirect effects of the endocrine dysfunction on the mental and emotional make-up has led to considerable confusion in thought regarding the specificity of the correlations between endocrinopathic states and personality and behavior disturbances. As will be shown later, certain broad changes in the personality accompany pituitary disorders as well as other endocrine disturbances with such regularity that they must perforce be looked on as causally related. The clinical picture presented in such cases may vary, however, because of the varying intensity of the indirect effects of the endocrine dysfunction which may be superimposed on the direct effects. The former may be looked on as the subjective effect on the child of the knowledge of his incapacity or infirmity. Obviously, this will vary with each child and will depend largely on his native or constitutional endowment, on his past experiences and on his social milieu. The indirect effects lead to a feeling of inferiority in the true adlerian meaning of the term. To what extent the organic inferiority will develop and what mental mechanisms may be produced as a result can be predicted only when the totality of the situation is known.

The personality is often profoundly altered by physical deformities. The tendency toward self pity that so readily develops may lead to introversion, to withdrawal from the realities of life and to neurotic manifestations.

On the other hand, the personality may be modified along definitely antisocial lines. Incorrigibility, delinquency and even criminality may be the "end results of interference with the normal development of the ego instinct of the personality."

Obviously, it is impossible in a paper of this nature to discuss in detail all the various endocrinopathies as they may affect the personality make-up and the ability of the child to make normal progress educationally, socially and emotionally. However, I do wish to describe some of the commoner forms of glandular disturbances that exceptional children may present.

One of the best known members of the endocrine fraternity is the thyroid gland. The structure and the functions of this gland have long been known to scientists. Especially well known has been the relationship of thyroid deficiency to mental retardation. The degree of mental retardation depends on the degree of thyroid deficiency; the greater the deficiency in the thyroid secretion, the greater the degree of mental retardation. This relationship is exemplified in cretinism and in myxedema in children. The literature con-

1. Lurie, L. A.: The Relation of Endocrinopathic States to Conduct Disorders of Children, Am. J. Psychiat. 9: 285 (Sept.) 1929.

tains many reports of marked improvement in the intellectual status as a result of thyroid medication. These conditions are as a rule not difficult to recognize, because when the mental impairment is severe the impairment in physical growth and development is so marked that the diagnosis is readily made. However, cases of such severe deficiency are, fortunately, relatively few in number and hence are not of very vital concern. It is the milder forms of hypothyroidism, forms in which the symptoms of thyroid deficiency are not so evident, that merit study, both because they are so numerous and because they are so easily corrected once they are recognized. What teacher has not come in contact with the child who is slow thinking and irritable, shows some form of speech defect, does not respond to the usual form of classroom discipline and is a school failure? Such children merit an endocrine examination because often they are suffering from varying degrees of thyroid deficiency.

In this connection I wish to call attention to a clinical syndrome in which extreme motor restlessness, destructiveness and speech disturbance are the outstanding symptoms. This triad of symptoms when present in young children almost always indicates a state of hypothyroidism. The child is very restless. Often the restlessness is so marked that he has to be forcibly restrained. He is careless with his possessions to the point of destructiveness. The complaint, however, for which most often the physician is consulted is that he shows some form of speech involvement, an involvement that may range from inability to pronounce certain letters and sounds to speech blocking and even to complete inability to speak.

The following two brief case reports illustrate this clinical syndrome:

CASE 1.—J. W. F., a white boy, aged 5, referred for examination because of a marked speech defect, according to the history had had a normal birth. He teethed and walked at the normal time. Talking, however, was markedly delayed, and even at the age of 5 he was difficult to understand. He was irritable and exhibited severe temper tantrums, especially when he was not understood. Destructiveness was not an outstanding characteristic, although he was careless with his toys.

On examination it was found that the child was unable to pronounce the letters C, K, J and S as well as all the linguals. His intelligence quotient as determined by the Stanford revision of the Binet-Simon test was 120. The endocrine examination showed that he was suffering from mild hypothyroidism. As a result he was given thyroid extract. He responded nicely to the therapy. Not only did the speech defect disappear but also the purely physical symptoms, such as the delayed bone growth and the hypotonus.

In this connection I want to emphasize especially that seldom do clinicians associate restlessness with hypothyroidism. We usually think of restlessness as a symptom of hyperthyroidism. In children, however, hypothyroidism may have as one of its outstanding symptoms a severe form of restlessness, and the other two symptoms named are generally associated with it.

The parents were cautioned not to permit the child to attend kindergarten. Rather, they were advised to wait until he had completely overcome the speech defect before having him enter school. The reason for this advice was that children who enter school while suffering from a speech defect are apt to acquire a feeling of inferiority both because they become conscious of their handicap and because the other children ridicule them. When a feeling of inferiority develops, other speech difficulties enter into the problem and make the cure very difficult. This particular child did not attend kindergarten but entered the first grade of school free from all speech impediments.

CASE 2.—J. D., a white boy, aged 4, referred for examination because he did not speak, according to his history had had a normal birth. His development, however, was markedly delayed. He did not teeth until he was 12 months old and did not walk until he was 20 months old. He first began to utter sounds at the age of 2½ years. He was very nervous and sucked his thumb, and there was a constant drooling of saliva. He was extremely restless, even in his sleep. At times he apparently would deliberately bump his head against the table, chairs or wall. This occurred especially when he was excited. He fought constantly with every one and particularly with his younger brother. He was also very destructive.

Endocrine examination revealed the fact that the boy was suffering from severe hypothyroidism. There was no evidence of any organic involvement of the central nervous system. (I mention that in passing, because the developmental history would tend to indicate some trauma at birth. However, careful neurologic examination failed to reveal any evidence of such injury.) A psychometric test could not be made because the child was uncooperative.

The child was given appropriate glandular therapy and soon began to show a slow but steady physical and mental improvement. Today, at the age of 7, he speaks fluently and has been entered in a special school. His intelligence quotient is 85.

These cases are two examples of the triad of clinical symptoms, motor restlessness, destructiveness and speech defects as evidence of hypothyroidism, and in a number of such cases there has been improvement in the ability to speak as well as in the other symptoms as a result of appropriate glandular therapy.

Although the thyroid gland is the best known of the endocrine glands, today the pituitary gland is receiving the most attention. It has been called, and I think justly so, the "master gland" of the body. It not only secretes many hormones that are of vital importance to the growth and development of the body but also secretes substances that either initiate the activity of other ductless glands or stimulate other glands to greater activity.

By far the commonest form of pituitary disturbance in children is the so-called Froelich's dystrophy, or dystrophia adiposogenitalis. This condition may originate during childhood or adolescence and is of especial interest from the psychologic and psychiatric standpoints because of the distinctive personality characteristics and types of behavior with which it is frequently associated.

Allan Rowe [2] found that of sixty-eight children suffering from endocrinopathies associated with behavior disorders fifty-three showed pituitary dysfunction. In a similar study at the Child Guidance Home,[3] I showed that pituitary disorders also constituted the dominant majority.

The true Froelich's syndrome is characterized by a triad of symptoms, namely, dwarfism, genital infantilism and adiposity of the mons-mammary girdle type. In other words, the fat is distributed principally on the breasts, abdomen and hips. Such children are small, fat and fair and have a distinctive personality make-up. They are as a rule cheerful, happy and apparently contented, their dispositions fitting in with the universal belief that fat boys and girls as well as fat adults are

2. Rowe, Allan, W.: A Possible Endocrine Factor in the Behavior Problems of the Young, Am. J. Orthopsychiat. **1**: 451 (Oct.) 1931.
3. Lurie, L. A.: Endocrinology and Behavior Disorders of Children, Am. J. Orthopsychiat. **5**: 141 (April) 1935.

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jolly, good natured and well behaved. Their reactions are slow, and hence they may be irritating and annoying to persons who feel that their slowness of response is indicative either of lack of interest or of carelessness. In fact, such children, because of their slowness, may give the impression that they are mentally retarded, whereas in the majority of cases the opposite is true. David Levy [4] reported that in a series of thirty-three cases of Froelich's dystrophy, studied at the Institute for Child Guidance, only five boys were below the average in intelligence while seventeen were in the superior group. This was a predominantly higher score than that for the entire series of patients at the Institute for Child Guidance, for which there is a median intelligence quotient of 99.

At this point I should like to call attention to the fact that when a child is given a psychometric test he is required not only to answer the questions correctly but also to answer them in a reasonable length of time. In other words, not only correctness but also quickness of response is essential in order to obtain a good score.

Children with hypopituitary disturbances of the Froelich type are at a disadvantage in such tests. While their native intellectual ability may be normal, they may fail to answer many of the test questions in the prescribed length of time because of their longer reaction time and hence slower reactions. In other words, while they may be unable to solve in one minute the problem "If two pencils cost 5 cents, how many pencils can you buy for 50 cents?" they can solve it if given another minute or two. Nevertheless, their intelligence quotient suffers and they may be rated as subnormal intellectually or even as mentally defective. Such children often exasperate their parents and teachers because of their inability to learn. The teacher is confident that the child can learn if he only will, but she will add mournfully that "it requires the explosion of a ton of dynamite under him to make him get a move on himself." Characteristically, after the explosion of dynamite, the child falls back smilingly into his usual calm, phlegmatic mode of life. It is important to recognize that this characteristic is on a hormonal basis. The sluggishness and long reaction time are not due primarily to the overweight but probably to the fact that the pituitary deficiency results in secondary hypothyroidism. It has been estimated that in hypopituitarism the basal metabolic rate may be lowered as much as 16 per cent. The implications regarding therapy in such cases are therefore obvious.

Another characteristic of these children is that they fall asleep readily and are difficult to arouse in the morning. Often they fall asleep in the classroom, much to the dismay and annoyance of the teacher, who attributes this symptom also to carelessness and indifference rather than to a lack of pituitary secretion.

From the behavioristic standpoint, children presenting the Froelich syndrome can be classified as belonging to the submissive-compliant type. Their lack of aggressiveness is outstanding. They are shy, gentle, easy going, timid and artistic, traits that are usually considered effeminate and which are in harmony with their physical appearance. This is especially noticeable in the case of boys who, because of the broad pelvis, rounded figure, fair smooth skin and rosy cheeks, high-pitched voice and absence of hair on the face and lips, have a distinctly feminine appearance.

As aptly stated by David Levy, "Their social adaptation to life is in the main one of easy compliance and submissiveness." They avoid strenuous physical exercise and the stress and strain of competitive work and sports. They prefer the arts to the sciences.

Their patterns of reaction and personality traits are due to the hormonal deficiency and can be looked on as the direct effects of the pituitary endocrinopathy on the personality.

In contrast to the submissive, compliant personality make-up of children suffering from Froelich's dystrophy is the aggressive, dominant make-up of children with the Lorain-Levy type of pituitary dystrophy. In the latter type there are dwarfism and genital infantilism without adiposity. Children suffering from this form of hypopituitarism are as a rule mentally alert. They are forward and aggressive and tend to dominate their environment. They usually capitalize on their infirmity.

The direct effects of the hormonal pituitary deficiency on the child's personality may be intensified or altered as a result of the reaction of the child himself to his own deficiencies in growth and structure. These are the indirect effects and may far overshadow the direct effects of the endocrinopathy. Thus the child who, as a result of the pituitary deficiency, has a submissive, passive, phlegmatic personality may become aggressive, dominant and antisocial because of a feeling of resentment acquired as a result of the knowledge of his structural defects. Passivity, overdependence and submissiveness may be replaced by aggressiveness, truculence and independence, even to the point of delinquency and criminality. Such changes represent attempts to soothe the wounded ego as well as compensation for feelings of inadequacy. On the other hand, the feelings of inadequacy and inferiority, instead of calling out such compensatory mechanisms, may further heighten the submissive-passive type of behavior and make the child more and more dependent on others and therefore less and less able to make normal social adjustments.

How a child will react to his own infirmity will depend largely on the conditioning influences of his environment as well as on his life experience. Hence no two subjects need react alike. One girl may assume a role of careless indifference to the scoffing comments of her friends regarding her overweight and shape; another, because of the same condition, may withdraw completely into herself and find refuge from the jeers of her playmates in a life of fantasy, revery and neurosis; while still another may attempt suicide. Similarly, the fat boy with the fair skin, the high-pitched voice and the small genital organs may become so timid and fearful as a result of the taunts and jeers of his playmates that a shut-in type of personality develops and he refuses to make normal social contacts; or he may resort to bribery, trying by means of candy, treats to the movies and the like to get into the good graces of the gang and thereby stop the constant allusions to his infirmity. Many a youngster has resorted to stealing and has become delinquent in order to carry out such a plan. On the other hand, the child, instead of withdrawing into himself or attempting to curry favor through bribery, may become antisocial. Feelings of hostility against society may develop because of the hurt his ego has suffered, and he will replace the passive-submissive personality which the hypopituitary condition has foisted on him with an

4. Levy, D. M.: Aggressive-Submissive Behavior and the Froelich Syndrome, Arch. Neurol. & Psychiat. **36**: 91 (Nov.) 1936.

aggressive-sadistic attitude that will make him attempt to get even with the world.

Therefore it is important to remember that the kind of personality disturbance that may be produced in a child suffering from a pituitary deficiency will depend not only on the direct effects of the endocrine disturbance, which are fairly uniform, but on the severity of the indirect effects on the personality produced as a result of the reaction of the total personality to the abnormality in its own structure and growth.

Many kinds of combinations are possible, and it is highly essential from the standpoint both of diagnosis and of therapy to determine the relative importance of the two factors.

The following brief case reports are presented to illustrate the foregoing statements:

CASE 3.—M. M., a white girl, aged 16, referred for examination because of a complete change in her personality make-up, had apparently always been a perfectly normal girl who had never caused her parents any concern. Her social adjustments and academic progress were all that could be desired. For the past year and a half, however, there had been a marked change both at home and at school. She had become listless and apathetic, was unwilling to exert herself and, although tractable, showed no initiative. She appeared mentally dull, and it was only as a result of attending summer school that she was able to pass the third grade at high school. Coincident with these mental and emotional changes, there was a rapid and tremendous gain in weight. The menstrual periods had become irregular, from three to four months elapsing between periods. The girl was very conscious of her overweight and refused to go in swimming or to associate with her former friends. Her only companion was another girl who was also markedly overweight. She was careless of her personal appearance. Another outstanding and disturbing symptom was an unusual degree of sleepiness. The girl slept from ten to fourteen hours every night and at times twenty hours. Often she would fall asleep in the classroom.

At examination she was seen to be tall and very obese. The excessive amount of fat had the typical girdle type distribution. The endocrine examination pointed to an involvement of the pituitary gland, with secondary involvement of the gonads and the thyroid gland. Appropriate glandular therapy was prescribed, with resultant improvement in both the physical and the mental symptoms. Weight was lost, menstruation became regular, the tendency to drowsiness disappeared and the girl again became the bright alert person she had formerly been. As a result of the loss in weight she lost her feeling of inferiority and resumed her normal social contacts.

This case brings out clearly both the direct and the indirect effects of a glandular disturbance. The direct effects of the deficiency in the pituitary secretion were marked overweight, drowsiness and sleepiness, menstrual irregularity, listlessness and mental sluggishness. The indirect effects were the development of a feeling of self consciousness and inferiority which led the girl to shun her friends, to avoid social contacts and to evade those activities, such as swimming, that might bring her defects before the public gaze. With the restoration of the function of the pituitary gland to normal, there was a return to normality in the girl's physical, mental and emotional make-up.

CASE 4.—D. R., a white boy, aged 16, referred for examination because of the poor and indifferent work which he had been doing at school for several years, was in the second grade of high school but had managed to get there only by dint of constant special tutoring. Both the principal and the teachers attributed his difficulties at school to lack of interest and concentration. Whenever the father "blew him up," there was an improvement in the boy's school work. This improvement, however, was short lived.

According to the history the boy was fairly tractable but was sullen and resentful of authority. It seemed difficult for him to exert himself either physically or mentally. At home he appeared even more sluggish and apathetic than at school. He had a huge appetite and thirst and was especially fond of sweets. He fell asleep readily, and it was difficult to arouse him in the morning. The boy himself admitted the truth of all the charges. In his defense he submitted the statement that he was unable to concentrate for more than ten minutes at a time. He had first noticed this condition when he was in the fifth grade of school. Since then it had become increasingly worse. He claimed that he always tried his best but that when he found that he was not making any headway he lost interest in his school work. In fact, he lost all of his ambition.

Examination revealed that this boy was suffering from the adolescent type of Froelich's dystrophy. As a result he was obese, sexually underdeveloped and mentally and physically sluggish. When tested by the Stanford revision of the Binet-Simon tests he received an intelligence quotient of 85. This rated him as subnormal intellectually. The psychologist stated that his reaction time was unusually long.

This boy has been under treatment for the past year and a half. During this time he has received glandular therapy, to which he has responded nicely. He has fully matured sexually and in addition has become more alert mentally and physically. So far this year there has been no necessity for special tutoring in school. Another psychometric examination has not been made because it is felt that not enough time has elapsed since the first examination for the boy to have completely forgotten the original test questions.

Here is a boy whose adaptation to school, and to his home and hence to life had become very difficult primarily because of an insufficiency of the secretion of the pituitary gland. To many a psychologist an intelligence quotient of 85 would be sufficient explanation for his inability to make normal academic progress. However, this intelligence quotient did not truly represent the boy's intellectual capacity. The same lack of hormonal deficiency that caused him to be overweight and underdeveloped sexually caused him to be apathetic and mentally sluggish and therefore to have a long reaction time. This was reflected in his inability to answer the Binet-Simon test questions in the required length of time, which lowered his mental age and his intelligence quotient.

CASE 5.—G. B., a white boy, aged 15 years and 6 months, was referred for examination by the juvenile court because he had stolen money repeatedly from his parents, relatives and friends. The stealing had been going on for the past six years, becoming more and more pronounced as the boy grew older. All forms of disciplinary measures had been of no avail. Persuasion, reasoning, corporal punishment, cajoling, bribery and exhortations by the minister and by the leader of the Y. M. C. A. had been resorted to in turn, but with no results. According to the mother, the boy was a kind, friendly, easy-going lad, well liked by his companions. He liked to read and enjoyed watching athletic games but never took any active part in them. In fact he refused to do any work that required physical exertion. He always wanted to do his work sitting down. The mother also stated that the boy had a huge appetite and was extremely fond of sweets, that he appeared tired and listless and that it was difficult to arouse him in the morning.

Examination revealed that he was a tall, fat boy with a female type of skeletal development. His skeletal development, in conjunction with the excessive amount of fat, which was deposited chiefly over the breasts, hips and abdomen, gave him a typically feminine appearance, which was heightened by the fact that the skin of the face was smooth, fair and highly colored and by the further fact that the voice was still high pitched. The genital organs were normal, but there was no

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evidence of any secondary sex characteristics. All the clinical and laboratory tests confirmed the diagnosis of the adolescent form of Froelich's dystrophy.

On questioning, the boy admitted that he had been stealing. Furthermore, he stated that he had a tremendous craving for sweets, especially ice cream, and that he was unable to curb it. In fact he told us with tears in his eyes that the only thing worth while in life was ice cream and that he had to have it. It was pathetic to see a big, fat, handsome-looking boy crying over the statement that he loved ice cream more than anything in life and that he had to have it. He claimed that the craving was overwhelming and overpowering and that his sole purpose in stealing money was to have the wherewithal to buy large quantities of candy and ice cream.

In this case it was felt that there was a direct causal relationship between the stealing and the glandular disturbance. This belief was based on the fact that as a result of the deficiency in the hormonal secretion of the pituitary gland the sugar tolerance had increased way above normal. A normal person can eat a certain amount of sugar, but if he eats more than that amount glycosuria will develop—the excess sugar will be spilled over and excreted by the body and a form of diabetes will develop. But this boy could eat huge quantities of sugar without showing any signs of diabetes or glycosuria. The pituitary deficiency was responsible for his huge appetite and especially for his craving for sweets. This craving was innate and elemental and beyond the power of the patient to control. He was driven by an uncontrollable urge to eat more and more sweets. The parents, because of their lack of understanding, were not willing to supply him with unlimited amounts of candy, nor were they able to do so. As a result, the boy resorted to direct, aggressive measures in order to obtain the things he blindly craved. These direct aggressive measures unfortunately were highly antisocial and brought him into conflict with the law.

It thus becomes apparent why all previous methods of discipline had failed. They were all doomed to failure because perforce neither exhortation, bribery nor corporal punishment could ever correct a pathologic condition based on organic changes.

The boy, instead of being scolded, whipped, bribed or threatened with incarceration in a reformatory, was given glandular therapy. As a result his sugar tolerance was lowered to the normal level. This in turn caused him to lose his intense craving for candy and ice cream. There being no further need for money, the stealing stopped automatically.

CONCLUSION

I wish to add one thought. In the past decade the discoveries in the field of endocrinology have been kaleidoscopic in their rapidity and startling in their magnitude. Yet endocrinology is far from being a closed book. All over the world physiologists, biochemists and clinicians are carrying on a tremendous amount of research. One can therefore confidently expect the announcement of many more discoveries that will aid in the study and treatment of behavior disorders and personality changes in children.

Doctors' Building, Garfield Place.

First American Hospital for the Insane.—The first American hospital exclusively for the insane had its beginnings in November 1766, when the governor of Virginia Colony, Francis Fauquier, made an earnest appeal for such a hospital in an address to the House of Burgesses. The hospital was opened for the reception of its first patients Oct. 12, 1773. John de Sequeyra, a leading doctor of Virginia, served as the first visiting physician, retaining his post until 1795. James Galt was appointed the first keeper. The functions of keeper and physician remained distinct until the year 1841, when they were combined in the person of Dr. John M. Galt, the first superintendent.—Deutsch, Albert: The Mentally Ill in America, New York, Doubleday, Doran & Co., Inc., 1937, p. 69.

THE MANAGEMENT OF THE SEPTIC PATIENT WITH OTITIS MEDIA

J. H. MAXWELL, M.D.
Assistant Professor of Otolaryngology, University of Michigan Medical School
ANN ARBOR, MICH.

The medical and surgical management of the septic patient with suppurative otitis media presents a distinctly individualized problem, one which does not submit to the simple solution of adapting the patient to one standardized procedure. I use the expression "the septic patient with otitis media" rather than "the patient with otitic sepsis" in order to emphasize the frequently forgotten fact that the otitis media may be an incident in the course of an infection elsewhere in the body responsible for the patient's sepsis.

The term "sepsis" is used rather broadly to represent a clinical picture manifesting numerous variations. It cannot have the concreteness indicated by such terms as bacteremia and septicopyemia. In the present discussion those patients have been considered septic in whom, during the course of an otitis media, leukocytosis has developed with intermittent fever rising to 103 F. or higher at least once daily and who have continued to manifest such evidence of illness without abatement for five days or longer. Those patients who have experienced gradually subsiding fever and leukocytosis following myringotomy are not included.

For the sake of generalization it may be said that a septic patient with otitis media may fall into one of three rather clearly defined groups:

In the first group there is an infectious process, local or general, producing the clinical picture of sepsis antedating the otitis media. This situation assumes great importance when the otologist sees the patient for the first time after the otitis media has become established. Unless a careful and detailed history is obtained he may be led to performing a mastoidectomy or ablation of a sigmoid sinus when the source of the sepsis is extra-aural. This is particularly true in those cases of tonsillitis and suppurative sinusitis producing the picture of sepsis or even an actual septicopyemia in which an otitis media develops secondarily and contributes but little to the septic course. If the aural infection is severe, one may have to summon considerable courage to refrain from an operation which, owing to its prematurity, might have disastrous results.

The second group of cases is that in which there develops during the course of an acute suppurative otitis media an intercurrent infection which in itself is responsible for the appearance of sepsis. Because of this possibility, one never should be hasty in performing a mastoidectomy on a septic patient without careful attention to a complete physical examination. Most otolaryngologists have had the experience of having referred to them for immediate mastoidectomy an acutely ill and septic patient only to find developing during twenty-four hours of observation the signs of another infectious process. Most common among these intercurrent infections are pneumonia and pyelitis. Erysipelas, rheumatic fever, endocarditis, coccic kidney or one of the acute exanthems may on occasion be found. Pneumonia, especially, may confuse the otologist when it appears during the course of a severe aural infection. The sudden rise in temperature and leukocyte count suggests the possibility of invasion of the sigmoid sinus; preeminently is this the case in children in whom physical signs in the chest may be very obscure. An

untimely mastoidectomy during the development of bronchopneumonia might well prove fatal.

The third group of cases represents those of real otitic sepsis in which the infection in the middle ear and mastoid is responsible for the whole picture. These cases require truly individualized management, both medical and surgical. In such a patient one may be dealing with a toxemia or with a true septicopyemia, which may or may not be related to actual phlebitis or thrombosis of the sigmoid sinus. Although no hard and fast rules can be drawn, there are a few sound principles to follow which have proved helpful:

1. In the first place it must be remembered that, since cases of otitic sepsis are rarely surgical emergencies, sufficient time can be taken to determine definitely that the sepsis is of otitic origin. In many cases of otitic sepsis there may be reasonable doubt that the condition of the ear is entirely responsible for the patient's illness. Such doubts frequently exist with regard to patients in whom the otitis media seems to be resolving, as evidenced by discharge which has decreased in amount and has become more mucoid. Such a patient may have temporoparietal or trigeminal pain with nocturnal exacerbation, or there may be a point of tenderness over the temporal root of the zygoma, the mastoid tip or the postsigmoid cells, or there may be radiographic evidence of osseous destruction in one of the peripheral parts of the temporal bone. These observations, which suggest a secondary active focus in some portion of the mastoid during the resolution of the otitis media, are of material importance in the study of the patient. In the presence of an otitis media of four or five days' duration, especially if complicating an acute exanthem which in itself might well be responsible for the sepsis, one may hesitate in condemning the middle ear and mastoid as being responsible for the alarming manifestations. Doubts may be held also in those patients who present evidence of an acute exacerbation of a chronic otitis media. The lack of mastoid tenderness due to the presence of a thick eburnated mastoid cortex, inconclusive radiographic examinations and the lack of aural symptoms make it difficult to condemn the ear as the chief factor in the production of sepsis. In these difficult cases the time taken to make a diagnosis must be utilized well. The following procedures have been helpful on many occasions in making a decision regarding the importance of an infection of the ear in a septic patient:

(*a*) Bacteriologic studies of the aural discharge.

(*b*) A record of the temperature, pulse and respiration every two hours.

(*c*) Daily examinations of the blood at the same hour. These should include a red and white cell count, the hemoglobin determination and a differential count with Wright's stain. Increasing leukocytosis, progressive secondary anemia and an increase in the number of immature polymorphonuclear leukocytes are significant.

(*d*) Daily examinations of the urine, including study of the stained sediment from a centrifuged specimen. One must remember that streptococci may be found in the urine before their presence is determined by blood cultures.

(*e*) Daily blood cultures. These should be taken at the peak of a temperature rise or right after a chill. Here one must realize that one negative blood culture means little. Also it is important to remember that pneumonia, severe tonsillitis and other acute infections may produce positive blood cultures.

(*f*) Examination of the patient twice a day with special reference to the heart (endocarditis), the lungs (pneumonia), the kidneys (coccic kidney), the skin (acute exanthem), the eyegrounds (evidence of increased intracranial pressure), the central nervous system (evidence of meningitis, brain abscess, petrositis or sinus thrombosis) and the cervical glands (suggestive evidence of jugular phlebitis).

(*g*) X-ray examinations of the chest repeated every forty-eight hours or even every twenty-four hours if there is a reasonable doubt that the ear is responsible for the sepsis and if the other conditions under consideration have been eliminated as possible etiologic factors. In the early stages of acute pneumonitis, both physical signs and radiographic evidence may be lacking but may make their appearance after twenty-four or forty-eight hours. The x-ray examinations may become positive some time before rales or signs of consolidation can be determined from the physical examination.

(*h*) Radiographic studies of the mastoids. In cases of sepsis it is important to know what type of structure is present within the temporal bone even though the infection is of only two or three days' duration. If the roentgenogram reveals a diploic structure, the ear is a more likely source of the sepsis than if the mastoid were sclerotic or of the large cell pneumatic type.

Thus a conscientious effort is made either to discover some occult extra-aural infection or to determine definitely that the sepsis is of otitic origin.

There are times when the otologist must stand alone against the pediatrician who hears no rales in the chest, the radiologist who finds the chest clear and the mastoid hazy, and the anxious parents who demand therapeutic action. However, he should insist on time for observation of the patient before performing the mastoidectomy if it is not perfectly clear to him that the ear is responsible. Conversely, the otologist may encounter opposition in demanding that an immediate operation be performed on a septic patient who has an otitis media of five or six days' duration and whose roentgenograms demonstrate a diploic mastoid with little or no evidence of pathologic alteration.

2. It must be remembered that the presence of organisms in the blood stream does not necessarily indicate an actual thrombus in the sigmoid sinus. The organisms may enter the general circulation from either the middle ear or the mastoid directly into the jugular bulb or the sigmoid sinus or by way of the countless small veins throughout the temporal bone. The possibility of a septic thrombus in the lateral sinus must be borne in mind, however, at the time of operation.

3. The surgical field should be completely covered.

(*a*) Careful exenteration of all accessible pneumatic bone is necessary. Special attention must be given to the postsigmoid cells and to the cells deep in the floor of the mastoid mesial to the facial nerve. On several occasions what appeared to be solid healthy bone has been found in the floor of the mastoid concealing a small parasinal abscess at a deeper level near the jugular bulb.

(*b*) The sigmoid sinus should be exposed widely in every septic case. This exposure should extend from the knee to a position deep in the floor. If an actual thrombus is not present, this exposure eradicates numerous small emissary veins which may be transmitting organisms into the general circulation. Even though the sigmoid plate may appear to be intact,

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smooth and ivory-like, there may be a concealed parasinal abscess beneath it. Experience has shown that such a collection of pus beneath an intact sigmoid plate usually means a septic thrombus within the sinus; this is true even when the duration of the infection has been but five or six days.

(*c*) If there is reasonable doubt about the patency of the sigmoid sinus, it should be explored through an incision. Needle puncture is not adequate. In several instances I have found a septic thrombus in the sigmoid sinus when the sigmoid plate appeared to be normal and when the parietal wall of the sinus demonstrated only a slight gray discoloration to suggest a pathologic change.

(*d*) If the sinus appears to be normal at the time of operation, and if sepsis continues unabated for five or six days after operation, and especially if metastatic abscesses appear, one should operate again and ablate the sigmoid. The decision regarding interference with the jugular vein must depend on the pathologic changes found in the sigmoid sinus. Before such an attack is made on the sigmoid sinus other possible causes for the continued sepsis must again be excluded.

(*e*) The contralateral ear must be a closed issue before the secondary attack on the sigmoid sinus. Even if the objective examination and radiographic studies tend to suggest satisfactory progress in what has appeared to be a less severe suppurative process in the opposite ear, it is often advisable to perform a complete mastoidectomy on this second ear before attacking the sigmoid sinus on the original side. If the infectious process in the second mastoid is found to be more extensive than anticipated, further delay may be considered. If this second mastoid presents no gross evidence of an unusually severe infection, one should proceed immediately with the attack on the sigmoid sinus of the original side, as already mentioned.

4. Whether or not an actual invasion of the sigmoid sinus or jugular bulb is found, meticulous attention must be given to the postoperative medical management. Even though the surgical attack has been adequate in removing the active focus, most patients will continue to show evidence of sepsis for several days, during which all available supportive measures must be used.

The progress of the septic process can be followed if the following procedures are executed:

(*a*) Recording of the temperature, pulse and respiration regularly at intervals of two hours.

(*b*) Daily examination of the blood to note the presence of leukocytosis, anemia and immature polymorphonuclear leukocytes.

(*c*) Daily blood cultures.

(*d*) Daily examinations of the urine to note evidence of kidney damage.

The postoperative regimen should include:

(*a*) Forced fluids to 4 or 5 liters a day for adults. If the patient is unable to take adequate fluids by mouth he should be given a continuous intravenous injection of 5 per cent dextrose. If he is vomiting he must be given physiologic solution of sodium chloride in addition; the amount of saline solution given intravenously should approximate roughly the amount of fluid lost by emesis. This amount replaces the dissipated body chlorides to a certain extent.

(*b*) High caloric-high vitamin liquid diet.

(*c*) Reduced iron in doses of 0.5 Gm. three times a day.

(*d*) Repeated small transfusions of whole blood from different donors. Generally speaking, it is well to give the adult patient about 200 cc. of blood every second or third day during the period of continued sepsis.

(*e*) In cases of hemolytic streptococcic septicemia, sulfanilamide seems to be beneficial. This should be given by mouth when possible, or by vein as a 0.5 per cent solution in 5 per cent dextrose. If given at all it should be used in adequate dosage, depending on the weight of the patient. The success of sulfanilamide therapy depends on its intelligent administration. Large doses should be given at first to bring the sulfanilamide content of the blood up to about 10 mg. per hundred cubic centimeters and should be followed by smaller doses to maintain the blood at that level. This of course demands frequent determinations of the sulfanilamide of the blood. Although results are not conclusive at this time, there is very definite evidence to suggest that this drug is of real value in treating the septic patient.

SACRO-ILIAC TUBERCULOSIS

FRED THOMPSON, M.D.
Fellow of the New York Orthopaedic Dispensary and Hospital
NEW YORK

In the records of the New York Orthopaedic Dispensary and Hospital there are the histories of twenty-three cases of sacro-iliac tuberculosis treated by operative fusion. Until 1919 the therapy employed was conservative, with rest in bed, heliotherapy and supportive measures. After 1920 arthrodesis of the sacro-iliac joint was always the method of choice unless the condition of the patient was such that operation would be immediately dangerous. This study is limited to those cases in which treatment was by operation.

Of the twenty-three patients, thirteen were females and ten were males. The average age at onset was twenty-three years, with four patients younger than 15. The right side only was affected in 52 per cent (twelve patients). Both sides were affected in two patients.

MULTIPLE LESIONS

It is felt that sacro-iliac tuberculosis is one of the rare forms of tuberculosis and usually indicates a widespread infection in the body. Seventy per cent of the patients (sixteen) showed evidence of tuberculosis in other parts of the body, and the infection in all but two of these was felt to be active at the time the sacro-iliac joint was fused. Forty-three per cent (ten patients) had pulmonary tuberculosis, and in nine the infection was active at the time of operation. Thirty-five per cent (eight patients) had lesions in the vertebral bodies as well as in the sacro-iliac joint, and in three the infection was active. Several showed additional tuberculosis in the shoulder, wrist, elbow, ankle, hip or sternum. It is probable that more extensive examination of the urine and the tonsils would have placed the incidence of multiple foci at an even higher percentage.

SYMPTOMS AND SIGNS

The average duration of symptoms before operation was two and one-half years, the longest fourteen years and the shortest three weeks. All of the patients had pain. Most commonly it was a dull ache in the buttock, frequently described as "a pain in the hip." This was present to a greater extent on standing and walking than lying. Unless additional disease was present in neighboring joints, the pain was limited to the buttock

or the posterior aspect of the hip region, or followed the distribution of the pain in sciatica. Pain low in the back was present, together with pain in the buttock, only when there was active tuberculosis at the lumbosacral joint (three patients). Pain radiating down the anterior aspect of the thigh from the hip to the knee was present in one case, together with pain in the buttock, as a result of active tuberculosis of the hip.

Only seven patients (30 per cent) had sciatica. It was always on the side of the affected joint. An interesting feature of this sciatica was that five of the seven patients had a large abscess in the buttock, causing tension or inflammation of the ligaments, fascia and gluteal muscles. In two cases aspiration of the abscess was performed and resulted in immediate disappearance of the sciatica.

Two patients had sciatic pain without an abscess in the buttock. One was relieved only after lumbosacral fusion for active tuberculosis, the sacro-iliac fusion having failed to relieve the sciatica. The other was completely relieved by sacro-iliac fusion within the first few postoperative days. Fusion of the joint could not have taken place in that short span of time. From these facts it would seem that disease of the sacro-iliac joint in itself does not tend to produce pain of the sciatic type.

Aside from pain, a few patients complained of listing of the trunk, limping and atrophy of the thigh, but these signs were not prominent features in the series. Physical examination showed that the various so-called signs of sacro-iliac disease were absent as frequently as they were present. Compression of the wings of the ilia, in an attempt to move the sacro-iliac joints, and straight-leg raising, produced pain in only half of the cases.

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DIAGNOSIS

The preoperative diagnosis was not easy. Clinical signs and symptoms suggested disease of the joint but were in no way pathognomonic of tuberculosis. Roentgenograms and laboratory tests also offered no conclusive evidence. All these factors, however, indicated the need of exploration of the joint for possible tuberculosis. The white blood count was usually within normal limits, with a slight elevation of the lymphocyte count. The sedimentation rate was elevated. The Mantoux test was always positive. In the diagnosis of tuberculosis of this joint, as of other joints, the negative Mantoux test proved to be of the greatest value in ruling out disease.

Roentgenograms showed active destruction of the joint surfaces, usually near the antero-inferior margin of the joint. Soft tissue shadows offered but little guidance, owing to the depth of the tissue that had to be penetrated by the rays. Oblique views, showing the opposing surfaces as parallel planes, were sometimes necessary. They were also of great value in determining the degree of fusion that had resulted from the operation.

An attempt was made to prove the presence of tuberculosis at operation by examination of the pus or tissue section, or by inoculation of guinea pigs. Tests with guinea pigs and examination of tissue were not always done together during the earlier years of the series. There were twenty-one cases of proved tuberculosis. The other two cases are included either because the patient had tuberculosis elsewhere in the body or because the results of tissue examination were strongly suggestive, and the subsequent course, as shown by clinical and roentgenographic examination, was typical of the disease. Three cases in which the joints were explored and fused for tuberculosis were not included in the series. The condition proved to be suppurative osteomyelitis on subsequent tissue examination, and the postoperative course was typical of that disease.

OPERATION

Arthrodesis of the joint was usually accomplished by a posterior approach with the patient under ethylene anesthesia. The incision was curved along the iliac crest and posterior superior spine toward the posterior inferior spine. The origin of the gluteus maximus was stripped up and the posterior ligaments reflected off the bone. A view of the joint was obtained by chiseling off the posterior superior spine and a portion of the posterior border of the body of the ilium. The joint was easily entered at the caudal end of the incision, near the posterior inferior iliac spine. The joint cartilage was removed with the chisel and curet. All the diseased bone that could be removed easily was curetted out. No attempt was made to obtain all the cartilage or carious bone from the joint, since arthrodesis and healing were accomplished in all but one case even though surgical invasion of the joint was minimal. No attempt was made either to curet out the diseased area at the antero-inferior end of the joint, where the disease is nearly always seen by roentgenograms to be more extensive. The neighboring sides of the sacrum and the ilium were chipped up, forming small and large, free and attached bone chips. These were brought into contact. Additional bone, if needed, was taken from the external surface of the ilium. Closure was accomplished by replacing the origin of the gluteus maximus and approximating the skin.

After the operation the patient was left in bed with a spine brace in some instances and with no support at all in others. A plaster cast was unnecessary and was dispensed with as too cumbersome and uncomfortable.

When abscesses were observed at operation they were usually aspirated before the surgical procedure was begun. This was principally for convenience, so that the operative field would not be soiled. In a few instances the walls of the abscess were excised or treated with phenol. Generally they were ignored. Sinuses were avoided if they lay on the outskirts of the possible line of incision. If directly in the field of operation they were excised. Closure of the wound was made tight in an attempt to obtain primary union. Such union was secured in only one of four patients who had a sinus before operation but was obtained in ten of the nineteen patients (41 per cent) in whom no sinus had been present before operation.

A singular lack of motion was noted at the joint even when the so-called sacro-iliac signs had been present before operation. It is felt that the degree of motion that takes place is comparable to that associated with fibrous ankylosis of the joint. The difference between fibrous ankylosis and fusion of the joint is the factor that will decide the outcome of the destructive disease. Fibrous ankylosis is not always sufficient to allow the body to master the tuberculosis; bony ankylosis is.

SINUSES

The postoperative sinuses were treated as uninspiringly here as in other parts of the body. One simply waited for the disease in the bone to become quiescent, knowing that in time the sinus would close. Secondary infection was avoided as carefully as possible. Exuber-

ant granulation tissue was cut off with scissors or burnt away with silver nitrate.

In twelve cases (52 per cent) draining sinuses developed after the operation. Most of them closed spontaneously within five months, usually when the disease began to show abatement by roentgenograms. Two sinuses drained for over five years but have since healed completely, and the patients are at active heavy work. It was not felt that the advent of a sinus postoperatively was an occurrence to be feared. The sinus usually closed when the disease in the bone subsided. Except in the patients who died, all the sinuses in this series eventually healed.

END RESULTS

The length of the follow-up period varied from six months to ten years. The average was 4.9 years.

Eighteen patients (78 per cent) are believed to be healed of their sacro-iliac tuberculosis; seventeen (74 per cent) have been actually cured and restored to active work and usefulness, several for as long as eight or ten years. One patient with tuberculosis of both hips is still under treatment, although it is three years since solid fusion of the sacro-iliac joint occurred and she is free from her sacro-iliac pain. The length of stay in bed after operation varied, depending on whether tuberculosis was active elsewhere in the body (group 1) or whether the focus was quiescent (group 2).

Sixteen patients in group 1 showing either active pulmonary lesions or elevation in temperature, pulse rate or sedimentation rate, were kept in bed until, clinically, the activity had abated. This required sometimes as long as three years. Every effort was made, however, to get the patient back to work as soon as possible, provided no other active focus was present. Although roentgenograms were a great aid in determining the degree of subsidence of the lesion in the bone, clinical observations on the pulse, temperature, weight and especially the sedimentation rate were a more correct gage of the disease activity elsewhere in the body.

The average length of stay in bed after operation for the seven patients in group 2, who did not have an active demonstrable focus elsewhere in the body, was three months. When the temperature, pulse and sedimentation rate remained normal for several weeks the patients were allowed to get up. Patients in this group went home in four months.

Although "up in three months and home in four" seems at first glance somewhat radical for patients with tuberculosis, this is not quite the case with tuberculosis of the sacro-iliac joint. The mechanism of the joint is such that, were it not diseased, arthrodesis could be done and the patient be up and walking as soon as the sutures were removed. When active tuberculosis is present at operation, absorption of previously diseased bone may continue for a few months. As the joint becomes immobile, the lesion is walled off and condensation of the bone occurs. The joint is solid long before condensation takes place, probably at six weeks. It is not necessary to insist on rest in bed until, as shown by roentgenograms, the diseased area is homogeneous bone. Walking and even the commencement of work did not in a single case in this series cause a recession in healing of the bone at the area of the disease. The only criteria, then, for allowing the patient to be up are the activity of other foci in the body. The fusion of one actively tuberculous joint serves as a lessening of the load the system must bear in its battle with the disease elsewhere. With the subsidence of the joint disease after fusion, the clinical expressions of activity, such as elevation of temperature and sedimentation rate, rapidly disappear, even when known foci of tuberculosis are existent in other areas of the body. That the sacro-iliac fusion results in cure of the local tuberculosis is shown by the fact that, when once the joint is solid and the bone has attained a healthy appearance in roentgenograms, a recurrence has never been noted. This is true even when other foci flare up with lowered resistance of the body.

DEATHS

Five patients (21 per cent) died, all within one year after operation. Two died of pulmonary tuberculosis, one of miliary tuberculosis, one of cardiac decompensation due to rheumatic heart disease and one of tuberculous meningitis. None died as the immediate result of operation.

The question is naturally raised whether or not operative intervention was the contributing cause of these deaths. The patient who died of rheumatic heart disease had a decompensating heart and was referred here by her medical attendant for operation. At the time of her death, one year later, there was nothing to indicate that she had another focus of tuberculosis. Meningitis developed in another patient, suddenly, during the twelfth postoperative month, while he was convalescing at rest in bed. Death occurred eleven days later. The patient who died of miliary tuberculosis had been referred for surgical intervention from the tuberculosis ward of another hospital. She had recently recovered from pleurisy, her lung fields were pronounced normal and it was stated that her general condition did not contraindicate operation. Two weeks after operation roentegenograms of her chest showed miliary tuberculosis. She died six months later. The two patients who died of pulmonary tuberculosis showed active lesions in the chest before operation. Afterward roentgenograms and auscultation of the chest did not elicit signs of increased activity until the third postoperative month. Both patients died six months after operation in other hospitals.

This review suggests that these last three deaths may have been caused by operation, yet in nine of the ten cases with additional pulmonary tuberculosis, eight showed no ill effects from the surgical procedure, although nine were considered active at the time of operation.

COMMENT

Petter,[1] in writing on the conservative treatment of unproved sacro-iliac tuberculosis, reported an average length of stay in bed of 891 days. In the present series of cases the average was 240 days. Petter found a mortality of five in thirty-one cases, compared with a mortality of five in twenty-three cases in the present series.

Smith-Petersen [2] reported thirteen cases, with four deaths. He found sciatica present in 77 per cent, as compared with 30 per cent in the present series.

CONCLUSIONS

1. Tuberculosis of the sacro-iliac joint and ligaments does not usually produce sciatic pain unless an abscess, with its resulting tension, is an accompanying feature.

2. Fusion of the sacro-iliac joint results in cure of the local tuberculosis.

420 East 59th Street.

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SULFANILAMIDE IN THE TREATMENT OF GONORRHEAL VULVOVAGINITIS

SAMUEL J. HOFFMAN, M.D.
MAURICE SCHNEIDER, M.D.
MAURICE L. BLATT, M.D.
AND
RUSSELL D. HERROLD, M.D.
CHICAGO

Gonorrheal vulvovaginitis in children is a common disease; at the Cook County Hospital alone we treat about 150 patients a year. Brunet and his co-workers [1] estimate that it occurs in from 1 to 5 per cent of the female children of the poor sections of the larger cities. We feel that this estimate is very conservative. In 1930 we were called to an institution to take care of several patients with vaginitis. After taking smears of all the girls, approximately 300, we found that 20 per cent were positive for gonococci. In Chicago there is a high percentage of active cases among the Negro population.

The sources of infection are numerous. In institutions the diaper appears to be the chief source of infection. Towels, linen, thermometers, bath tubs, attendants and nurses also may convey the organism from one child to another. About 80 per cent of our patients are traced directly to their homes, where bed linen, bath tubs, circular toilet seats and towels are chief sources of infection. About 10 per cent of the cases are due to rape.

The susceptibility of a child to gonorrhea is very great. Instead of the resistant squamous epithelium found in adults, there is present a pseudosquamous or delicate columnar epithelium. Vaginal secretions containing lactic acid are gonococcidal in the adult but are absent in the child. In addition the small size of the labia and the absence of pubic hairs decrease the protection against the entrance of gonococci.

Most young children present no symptoms other than the discharge on the diaper. In older children itching, burning and frequency of urination are noted. An occasional rise in temperature, even in the absence of complications, has been found.

Stein, Leventhal and Sered [2] found an involvement of the cervix in most cases of acute gonorrhea. We have found the inflammation a general one. The hymen, vulva, vagina, urethra and cervix are all involved in the acute stage. The labia are often swollen and hyperemic, and granulations which bleed easily when touched with an applicator are often seen in the vagina. We have found the cervix involved in practically all acute infections since making routine vaginoscopic examinations. The cervix is swollen and hyperemic. Sometimes ectropion is present.

In the chronic stage the vagina is bluish red and sometimes succulent. The cervix may be diffusely involved, but in many patients only small punctate hemorrhagic areas are noted.

While some authors maintain that gonococci are found only in the acute stage and consider all vaginal discharges as of gonorrheal etiology, we have admitted and treated only those patients in whom gonococci were found.

Before the use of sulfanilamide, the treatment of gonorrheal vulvovaginitis consisted mainly of chemicals applied locally and the use of biologic agents. Since 1928 we have used various chemicals locally, such as silver nitrate, mercurochrome, acriflavine, potassium permanganate, merthiolate, metaphen, ammoniated mercury and lactic acid. Of all these local applications, we have obtained the least discouraging results with the silver nitrate in 0.5 to 1 per cent strength in 10 per cent gelatin. With this treatment we obtained negative smears in some instances in from six to eight weeks, which result was considered very satisfactory at that time. Most infections remained positive for more than five months. In a series of 124 patients that we treated at the Cook County Hospital the average length of stay in the institution was 4.6 months. Recurrences were very common. Forty of the patients returned because of recurrent infection in from two weeks to eight months after discharge from the hospital. Undoubtedly many more had relapses but did not return.

A temporary wave of enthusiasm followed the introduction of biologic products in the treatment of gonorrheal vulvovaginitis. In 1930 we [3] reported a large series of cases treated with immune horse serum, gonotoxin broth filtrates injected intracutaneously and subcutaneously, ectoantigen intracutaneously, whole gonococci intracutaneously, and local application with gonotoxin. In 1934 we [4] reported on lysed gonococci in the treatment of gonorrheal cervicovaginitis. In general the results were not particularly encouraging with any of these methods of treatment.

In 1933 Lewis [5] reported on the use of estrogenic substance, which changes the immature vaginal epithelium to the mature thick epidermis-like structure of the adult, and containing lactic acid secretion which supposedly is gonococcidal. We treated eighteen patients with theelin, giving 2,000 international units three times weekly. The amounts used in individual patients varied from 64,000 to 184,000 units. In general the results were somewhat better than with the silver nitrate treatment, but still not very encouraging, since 40 per cent of the patients had recurrences.

Working independently, and at about the same time, Reuter,[6] Dees and Colston,[7] and Herrold [8] reported favorable preliminary observations on the use of sulfanilamide in adult male patients with gonorrhea. Since overenthusiasm might cause the pendulum to swing too far in favor of such a drug, we have tried to guard ourselves with a cautious skepticism in the application of sulfanilamide to gonorrheal vulvovaginitis. The history and pharmacology of sulfanilamide have been discussed amply in many previous publications. One of us (Herrold) has found that sulfanilamide in concentrations stronger than 1:10,000 is bactericidal in vitro, although such determinations must be made in periods of hours to demonstrate gonococcidal action instead of the standard twenty minute contact as used with other antiseptics. The exact mechanism of its action is not known. However, the primary factor is that of bacteriostasis with eventual bactericidal effects.

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From the Departments of Pediatrics and Urology, University of Illinois College of Medicine, and the Department of Pediatrics, Cook County Hospital.

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7. Dees, J. E., and Colston, J. A. C.: Sulfanilamide in Gonococcic Infections, J. A. M. A. **108**: 1855 (May 29) 1937.
8. Herrold, R. D.: Treatment of Gonorrhea and Other Infections in the Urinary Tract with Sulfanilamide, Urol. & Cutan. Rev. **41**: 468 (July) 1937.

Carey[9] of Boston treated two cases of gonorrheal vulvovaginitis in children with sulfanilamide and obtained prompt favorable results in both cases.

Our series includes a group of twenty-five children varying in age from 3 months to 10 years. Three of this group had chronic infections at the time of institution of treatment, one subacute and the remainder acute infections. No local treatment was used and sulfanilamide was administered orally in fruit juice to all the patients. The supply of sulfanilamide for this study was furnished by the Winthrop Chemical Company. A standard dosage was used throughout.

TABLE 1.—*Dosage of Sulfanilamide*

Days	Dosage per Day
1st and 2d day	¾ grain per pound
3d to 7th day, inclusive	⅜ of original dose or 9/16 grain per pound
8th to 21st day, inclusive	⅛ of original dose or ⅜ grain per pound

During the first two days the daily dosage was three-fourths grain (0.05 Gm.) per pound of body weight in four equally divided doses at intervals of six hours. During the next five days the dosage was reduced to three fourths of this amount, or nine-sixteenths grain (0.04 Gm.) per pound daily. During the second and third weeks the dosage was reduced to three-eighths grain (0.024 Gm.) per pound daily or one-half the initial dosage. At the end of a three weeks course of treatment a rest period of one week was given regardless of the results of smear examinations. All patients whose smears were positive at the end of this rest period were given a second course exactly like the first. A rest period was also given at the end of the second course of treatment, and for the majority of patients who were still infected at the end of the second rest period a third course of treatment was prescribed. A few patients were given a fourth course of treatment after the third rest period. An outline of the dosage is given in table 1.

Results in this group of twenty-five patients are summarized in table 2. It may be noted that only seven patients were apparently cured during the first course of treatment, or under a period of twenty-one days. By apparent cure we mean a clinical disappearance of all signs of infection from the urethra, vagina, cervix and rectum, as well as negative smears from these areas. None of this group of seven were cured under a period of sixteen days, and the average was 17.3 days. Four of the group cured during the first course of treatment had acute infections, two chronic and one subacute. During the second course of treatment, nine additional patients were cured between the thirty-fifth and forty-ninth day of treatment, with an average of 42.9 days. Seven of the nine patients not cured were given a third course of treatment, and one of this group was cured during the third course, or in sixty-three days. Four of the six remaining patients not yet cured were given another course of treatment after the usual rest period, and only one of this group of four was cured by such additional treatment. Analysis, therefore, reveals that approximately two thirds of the patients were cured by one or two courses of treatment, after which there was a very marked drop in the percentage of benefit derived by a third and fourth course of treatment. It would seem then that patients who do not respond to two standard courses of treatment have gonococcic infections that are relatively resistant to therapy with sulfanilamide.

It is well known that many patients with gonococcic vaginitis, who are thought to be cured by the standard methods of examination, will have recurrence after a variable period. All patients in this group were kept in the hospital for two weeks after negative smears were obtained, and all those listed as cured had follow-up examinations from one to three months after discharge from the hospital.[10] The examinations revealed that they were symptomatically normal, and smears were negative for gonococci. One patient who was examined after discharge from the hospital was found to have had extracellular diplococci but no discharge in the vagina, and she is not included in the group of eighteen of this series who are listed as cured.

Negative smears will be found in many patients during the treatment or for a period of from three to seven days after the discontinuance of sulfanilamide. On the other hand, it was exceptional for patients to have a recurrence if they were clinically and microscopically normal for a period of two weeks after discontinuance of the drug. Smears were taken in a routine manner through the vaginoscope and sent to two laboratories for examination.

All reports on the use of sulfanilamide in any substantial series of patients have included a varying sort of side reactions from mild to so severe that discontinuance of the drug seemed advisable. However, in our group of children the incidence of side reactions was strikingly less than in any comparable series of adults that have been reported. Gastrointestinal symptoms, which so commonly occur in adult patients, were entirely absent in this group of children. Only one patient had a typical "drug fever" reaction, which occurred on the tenth day and was associated with urticaria and swelling of the face. Two other patients had a slight fever of less than 100 F. One patient had a rather severe epistaxis, and three others mild epistaxis. A definite anemia occurred in only one patient. Clinically, the patient had no subjective symptoms, but unfortunately this was one of the patients whom we were unable to observe after discharge from the hospital, so that we are unable to state the ultimate condition of the anemia. It is noteworthy that the majority of this group of patients had a definite anemia on entrance to the hospital, and they were given as a routine liver and iron therapy for this condition. Such treatment was continued during the administration of sulfanilamide, and generally there was a definite improvement in the blood on the combined treatment similar to the response to liver and iron therapy without sulfanilamide. The patient who had sulfanilamide fever and urticaria also had albuminuria, which cleared up promptly following the discontinuance of the drug. Cyanosis was not noted in any of this group on the dosage outlined.

TABLE 2.—*Patients with Gonococcic Vaginitis Treated with Sulfanilamide*

Course	Number of Patients	Number of Patients Cured	Average Number of Days to Cure
First	25	7	17.3
Second	18	9	42.9
Third	7	1	63.0
Fourth	4	1	90.0

9. Carey, B. W.: The Use of Para-Aminobenzenesulfonamide and Its Derivatives in the Treatment of Infections Due to the Streptococcus Hemolyticus, the Meningococcus and the Gonococcus, J. Pediat. **11**: 202 (Aug.) 1937.

10. Since this paper was submitted, all cases have been rechecked at from four to seven months after discharge from the hospital and all have been found to be negative vaginoscopically and microscopically.

COMMENT

While we appreciate that a larger percentage of patients might have been cured during the first course of treatment by a greater dosage of sulfanilamide, we wished to keep the amount of the drug administered within the limits of safety for ambulatory patients. In general, a large percentage of the patients with gonococcic vaginitis must be treated without hospitalization. Hageman [11] reported, in a series of sixty-eight children, a much greater incidence of complications than we observed in our series. Three of his series had gonococcic vaginitis, and the others miscellaneous infections. He mentions that cyanosis associated with methemoglobinemia was encountered in approximately 50 per cent of the cases treated. He also states that one in every six patients treated had fever between the seventh and tenth day after the institution of sulfanilamide therapy and that one half of the patients with a febrile complication had an accompanying morbilliform rash. He states in regard to dosage that, in general, 1 gram daily to 20 pounds (9 Kg.) of body weight was given in divided dosage at intervals of six hours. This is the same dose that we used for the first two days of treatment; but, while Hageman does not state the duration of this dosage, it is assumed that it was continued during the duration of treatment, which could no doubt account for the high incidence of reactions as compared to our series with a schedule of decreasing doses.

It is well known that patients with gonococcic vaginitis may be clinically free from symptoms for months and then have an exacerbation with positive smears. We have noticed this during the past ten years following other forms of treatment, but, as a rule, there would be a substantial number with recurrence during a period of from one to three months following discontinuance of treatment. In this series, after the use of sulfanilamide, there was but one patient of those considered cured when they left the hospital who later showed a positive smear but no clinical symptoms. All patients listed as cured had follow-up examinations after leaving the hospital, but most of them had two such examinations. Therefore, we feel that with an apparent cure two weeks after discontinuance of sulfanilamide there is less likelihood of a later recurrence than after the former methods of treatment, including endocrine therapy.

It is not known why certain patients, on a like dosage, do not respond favorably to the administration of sulfanilamide. It seems noteworthy that in our series there were two girls from the same family, one of whom was cured in twenty-one days, while her sister failed to be cured after three courses of sulfanilamide. It is likely that these two children had the same type of gonococci, so that in this instance, at least, primary serologic types were not an explanation of the difference in the clinical reaction to the drug.

One of us (Herrold) has noted approximately the same efficacy of sulfanilamide in adult male patients that we obtained in children. In about one third of adult males, results were highly satisfactory in that the patients were cured in a period of from ten to thirty days. In approximately another third of the patients, response was fairly satisfactory and cure was obtained after from thirty to sixty days. In the remaining third the effect of the drug was unsatisfactory, either because of the inability of patients to continue the use of sulfanilamide as the result of the more serious side reactions, or the patients were refractory to the action of the drug.

11. Hageman, P. O.: Clinical Experience in the Use of Sulfanilamide at the New Haven Hospital, J. Pediat. **11**: 195 (Aug.) 1937.

SUMMARY

We treated gonorrheal vulvovaginitis by various methods prior to the use of sulfanilamide.

In a series of twenty-five patients who were given sulfanilamide, seven were cured in an average of 17.3 days and nine in an average of 42.9 days. Only two of the nine remaining patients were cured by additional administration of sulfanilamide.

A standard dose of sulfanilamide was used in all; the results suggest a comparative futility of the continuation of more than two standard courses of treatment.

The children have tolerated sulfanilamide extremely well as compared to adults, in whom reports have indicated a high incidence of reactions.

185 North Wabash Avenue.

CARBON DISULFIDE POISONING

WITH A REPORT OF SIX CASES

SAMUEL T. GORDY, M.D.
AND
MAX TRUMPER, PH.D.
PHILADELPHIA

With the rapid growth of the rayon industry a health hazard has reappeared—carbon disulfide poisoning. The United States is one of the largest rayon manufacturing countries in the world, having produced 290 million pounds in 1936. Of the twenty-five rayon factories with 50,000 employees now operating in this country, nineteen are viscose plants using carbon disulfide. For every 3 pounds of rayon produced, 1 pound of carbon disulfide must be used. In 1936 more than 33 million pounds of carbon disulfide was consumed by one large viscose corporation.

Foreign journals contain reports of many hundred cases of poisoning from carbon disulfide in viscose and rubber plants, yet in our own country this form of poisoning has received little attention in medical journals. For some reason the subject has been shrouded in mystery and to our knowledge only five reports have been made by American authors: Peterson [1] in 1892, Heath [2] in 1902, Jump and Cruice [3] in 1904, Francine [4] in 1905 and Hamilton [5] in 1925. We ourselves have examined six cases and have knowledge of many more. With the application of the new occupational disease compensation laws in many of the states, more will be heard of this insidious poison.

The toxicology of carbon disulfide concerns itself principally with the incidence of disability to workers using this chemical solvent in some processes pertaining to rubber, in making explosives, as an insecticide, in extraction of fat from hides, bones, wool and vegetables, in the sulfur clearing of crude paraffin and especially in the manufacture of artificial silk (viscose). Historically, the incidence of carbon disulfide poisoning roughly parallels the industrial uses of this compound in various countries. In 1843 Parkes's process

1. Peterson, F.: Three Cases of Acute Mania from Inhaling Carbon Bisulfide, Boston M. & S. J. **127**: 325 (Oct. 30) 1892.
2. Heath, F. C.: Amblyopia from Carbon Disulfide Poisoning, Arch. Ophth. **11**: 4 (Jan.) 1902.
3. Jump, H. D., and Cruice, J. M.: Chronic Poisoning from Carbon Disulfide, Univ. Pennsylvania M. Bull. **17**: 193 (July-Aug.) 1904.
4. Francine, A. P.: Acute Carbon Bisulfide Poisoning, Am. Med. **9**: 871 (May 27) 1905.
5. Hamilton, Alice: Industrial Poisons in the United States, New York, Macmillan Company, 1925, p. 366.

for the cold vulcanization of rubber was introduced into France. Carbon disulfide was recognized by the French as an industrial poison as early as 1851, and workers were warned of its danger if the processes were carried on without proper ventilation. Duchenne de Boulogne [6] is credited with first having reported polyneuritis from this cause. Delpech [7] made the first significant and systematic study, reporting twenty-four cases, and supplemented these with animal experiments, which confirmed carbon disulfide as the causative toxic agent. He established carbon disulfide intoxication as a distinct clinical concept and established the basis for its differentiation from such contemporary neurotoxic syndromes as those arising from alcohol and lead; he gave it the name of carbon disulfide neurosis (nevrose sulphocarbonée). Delpech remarked that the severity of the resulting disorder bore no necessary relationship to the apparent acuteness of the onset of symptoms. He attempted to classify the chaos of symptomatology that the observed cases presented. Out of the mélange of acute symptoms he divided his "acute" cases into two periods, the first a period of excitation and the second a period of collapse. The first period he described as one marked by an "exaltation of the intellectual faculties" and noted especially that sexual stimulation occurred with some degree of frequency. The second period, by contrast, consisted in general of a reversal of the picture with dulness, torpor and confusion dominating the picture. As the industrial use of carbon disulfide grew, further reports were added to the literature from England and Germany. Laudenheimer's [8] monograph in 1899 containing more than fifty cases reemphasized the psychiatric aspects of this disorder in which Delpech had pioneered.

Until the introduction of artificial silk, the rubber industry was the principal origin of carbon disulfide poisoning. Thereafter from Germany, France, Holland and Italy have come the majority of reports. For example, in 1928 carbon disulfide poisoning ranked second in frequency in industrial disorders in Germany (Sommerfeld [9]). With the exceptions mentioned, it is remarkable that there have been relatively few case reports of this disorder in America. However, it must also be remembered that industrial diseases in America have not had and do not have the emphasis or study which obtains in many European nations, where they are reportable and compensable.

The mode of entrance of carbon disulfide into the body is principally by inhalation of its vapor. Less frequently it is taken in by contact of the skin with the liquid, producing a sensation of burning followed by anesthesia. Prolonged contact produces second and third degree burns with blistering and a local neuritis.[10] Lecousse and Dervillée [11] report a case in which a woman, aged 30, accidentally drank half a glassful of a mixture of carbon disulfide and carbon tetrachloride. The immediate symptoms were burning in the pharynx and esophagus and painful throbbing in the temples, marked redness of the face and slight dimness of vision. Within three hours vomiting and diarrhea began and then there were complete inertia, a vacuous expression to the face and deep narcosis for two hours. As she came out of her coma she had marked stiffness of the jaws and anarthria, with persistence of vomiting and diarrhea. Several hours later she recovered her speech. She then described her sensations. She felt that the end of the world had come, she had painful and terrifying dreams, she had visions of the various members of her family rolling down to a steep precipice. She did not have a period of excitement or of drunkenness in the development of the symptoms of intoxication.

Poisoning may occur in two forms: the acute and the chronic. In the acute form the worker inhales the vapor in considerable concentration such as may occur when a container of the chemical is broken accidentally and the worker cannot escape in time or when workers are required to clean out vats in which it has been stored and the vats are not fully aired beforehand.

The chronic form, in which the worker is exposed to its vapors in small concentration usually for months, sometimes for years, is by far the more frequent form.

The chemical pathology of carbon disulfide poisoning is well understood. The pathologic changes depend on the solubility of lipoids in this agent. Since the biologic structure and physiologic function of neural tissue are so very dependent on the lipoid setup in its cytoplasm, nerve fibers and myelin sheaths, it can be readily appreciated that lipoid solvents which are introduced within the body will give evidence of their action primarily with neurotoxic manifestations. Carbon disulfide poisoning therefore belongs to the pharmacotoxicology of narcotic poisons such as ether, chloroform and alcohol. It is a specific cerebral and neural poison and in its acute phases produces narcosis and paralysis after preliminary excitation.

In experimental animals (Poincaré,[12] Lehmann,[13] Koester [14]) poisoning may produce irreparable changes in the central and peripheral nervous systems, with changes in the ganglion cells, myelin sheaths and axis cylinders: at first increased irritability, then diminished excitability and finally irreversible degenerative changes. The toxin cannot be said to be selective in its action on any particular centers or areas, but in general the gray matter suffers most heavily. In the brain diffuse softening with breaks in the pathways occurs, and also in the cord with dissolution of the myelin. Degenerated cells are found in all portions of the brain; hence the protean character of the symptoms. In experimental animals there are in addition fatty degeneration of the heart muscle and dilatation and rupture of cerebral vessels. Wiley, Huepner and von Oettingen [15] reported extensive degeneration of the testicles in their animals.

The effects on such animals may be divided into three groups; narcotic, irritable and paralytic. The narcotic phenomena are torpor, dulness, semistupor and muscular weakness. The phenomena of irritability are incoordinate movements, muscular twitchings, vomiting, muscular cramps and disturbance of vasomotor centers. The paralytic symptoms in both animals and man are disappearance of tendon reflexes, muscular

6. de Boulogne, Duchenne, cited by Laudenheimer.[8]

7. Delpech, M. A.: Recherches sur l'intoxication speciale que détermine le sulfure de carbone, Ann. d'hyg. pub. et méd. leg. **19**: 65, 1863; Mémoire sur les accidents que develloppe, chez les ouvriers en caoutchouc, l'inhalation du sulfure de carbone en vapeur, Bull. de l'Acad. de méd. **21**: 350, 1856.

8. Laudenheimer, R.: Die Schwefelkohlenstoffvergiftung der Gummiarbeiter, Leipzig, 1899.

9. Sommerfeld, T.: Die Entschaedigung von Berufskrankheiten in chemischen Betrieben, Med. Welt **3**: 1303 (Sept. 7) 1929.

10. Hueper, W. C.: Etiologic Studies on the Formation of Skin Blisters in Viscose Workers, J. Indust. Hyg. & Toxicol. **18**: 432 (Sept.) 1936.

11. Lecousse, H., and Dervillée, P.: Intoxication aiguë par ingestion accidentelle d'un melange à base de sulfure de carbone, J. de méd. de Bordeaux **111**: 71 (Jan. 30) 1934.

12. Poincaré: Recherches expérimentales sur les effects des vapeurs de sulfure de carbone, Arch. de physiol. norm. et path. **1**: 20, 1897.

13. Lehmann, K. B.: Experimentelle Studien über den Einfluss technisch und hygienisch wichtiger Gase und Daempfe auf den Organismus, Arch. f. Hyg. **20**: 26, 1894.

14. Koester, G.: Ein klinischer Beitrag zur Lehre von der chronischen Schwefelkohlenstoffvergiftung, Deutsche Ztschr. f. Nervenh. **26**: 1, 1904.

15. Wiley, F. H.; Huepner, W. C., and von Oettingen, W. F.: On the Toxic Effects of Low Concentrations of Carbon Disulfide, J. Indust. Hyg. & Toxicol. **18**: 733 (Dec.) 1936.

palsies, respiratory and cardiac paralysis and death. There are no especial hemolytic phenomena.

While acute death has occurred in some of the cases of carbon disulfide poisoning it is relatively infrequent. There is a dearth of autopsy material in man and it is necessary to depend to a large extent on the studies in animals for the demonstration of the pathologic changes that result. Recently, however, Abe [16] reported a case of carbon disulfide poisoning of thirteen years' duration in a young man who was employed in mending rubber shoes. After headache, malaise, anorexia, depression, irritability and neurasthenoid symptoms of long standing a psychosis of the Korsakoff type developed, with loss of memory, retrograde amnesia with confabulation, speech disturbance, weakness of the legs, urinary disturbance, Romberg and Babinski signs, muscular cramps, marked tremor, edema of the legs, high fever and albuminuria (a diagnosis of uremia had been made). Death occurred after ten months of severe symptoms, and the autopsy elucidated the entire clinical picture. The microscopic examination showed regressive changes in the nervous system in addition to fatty degeneration of all the other organs. There was no evidence of any acute inflammatory process in the vascular areas of the nervous system (no polymorphonuclear leukocytes anywhere nor any evidence of chronic inflammatory vascular change). The fatty degeneration of the nervous system was mostly central and not strikingly peripheral. The degenerative changes in the cerebral cortex were of such wide distribution as to be independent of the vascular supply and independent of any presumed chronic vascular damage. The damage was especially marked in the gray matter of the cerebrum, cerebellum and brain stem, while the white matter by contrast was almost free from change. There was marked degeneration of the pyramidal tracts in the pons, extending into the cord. The degenerative changes of the neurons and myelin sheaths showed evidence of a mixture of recent and long standing toxic damage of both moderate and severe degree. These changes were attributed to direct toxic damage and also were nutritional in origin.

In man the symptoms of acute poisoning are malaise, headache, vomiting, vasomotor disturbances, muscular cramps, motor unrest, excitement, unconsciousness and motor palsies. Floret [17] reported three cases of so-called acute poisoning. In one case the person inhaled the concentrated vapor of carbon disulfide for a few minutes. Unconsciousness resulted almost immediately. For a year following this she was pale, lacked appetite, vomited and had tremor of the hands. Later epileptiform seizures, muscular twitching and gastrointestinal disturbances occurred. Gastric analysis showed diminished hydrochloric acid. After longer exposure in the same room as this patient, and after inhaling more concentrated carbon disulfide vapor, two other persons reacted similarly. In addition to loss of consciousness there were episodes of laughter and weeping, disordered heart action and muscular twitchings. After several weeks one showed improvement from gastrointestinal symptoms but the other had epileptiform seizures under excitement.

In chronic poisoning three syndromes may be differentiated, which frequently come together; (1) somatic disorders, (2) organic disturbances of the central nervous system, (3) psychic disorders.

16. Abe, Masazo: Beitrag zur pathologischen Anatomie der chronischen Schwefelkohlenstoffvergiftung, Jap. J. M. Sc. Tr. VIII, Int., Med., Pediat. & Psychiat. **3:** 1 (Sept.) 1933.

17. Floret, cited by Krause.[22]

Symptoms of general somatic character are weakness, loss of appetite, diarrhea or obstinate constipation, loss of weight, simple quantitative anemia (with no change in the blood picture), bradycardia, tachycardia or arrhythmia, weakness of the limbs, pallor, cachexia, an ashen gray appearance of the conjunctiva, a primary increase in libido and later diminution and loss of sexual function (Constensoux and Heim,[18] Quarelli [19]). A syndrome resembling Addison's disease has been reported by Devoto.[20] He describes the case of a young physician whose research work in the fat extraction of chick embryos exposed him for six hours to an atmosphere heavily laden with the vapors of carbon disulfide. At the end of the day severe headache, dizziness, malaise and loss of appetite developed and he could not return to the laboratory the next day. Marked weakness developed; he was confined to bed and the third day jaundice developed. Within two weeks there was enlargement of the liver, secondary anemia and dark brown spots in the mouth and increasing weakness. Within a month typical symptoms of Addison's disease developed with arterial hypotension, pigmentation of the skin and progressive asthenia. Death occurred two and half years later. In view of the prior health of the young physician, the author ascribed the addisonian picture to damage done the adrenals by the toxic action of the inhaled carbon disulfide, with a simultaneous effect on the cells proper, the nerve ganglions and the capillaries, with an immediate disruption of function and subsequent sclerosis and atrophy of the organ. There was no autopsy, but the authorities regarded him as industrially incapacitated by carbon disulfide poisoning and after his death his family was compensated accordingly.

Weise [21] analyzed the gastrointestinal symptoms in 100 cases, thirty-two being cases of chronic carbon disulfide poisoning from the rubber industry and sixty-eight of combined chronic hydrogen sulfide and carbon disulfide poisoning among workmen in the manufacture of artificial silk (viscose method). The men had worked an average of twenty-five months in these industries. In most of these cases a disturbance of the function of the stomach was noticed by the workmen within eight to nineteen months after beginning work in these industries. In 14 per cent of these cases, ulcers of the stomach or of the duodenum were diagnosed and in several cases operations were performed. In an additional 11 per cent, ulcers were suspected.

The morbidity statistics from several large artificial silk factories indicate an incidence of stomach trouble of 17.7 per cent from exposure to carbon disulfide and hydrogen sulfide, while all other textile factories show but 2.7 per cent. In the case of ulcers of the stomach or of the duodenum, the figures were 2.6 and 3 per cent.

ORGANIC NEUROLOGIC MANIFESTATIONS

According to Ranelletti,[22] 80 per cent of his cases showed neurologic symptoms. Those encountered are

18. Constensoux, H. G., and Heim, M. F.: Fréquence rélative des stigmates nerveux dans le sulfocarbonisme chronique, Internat. Cong. Indust. Hyg., Brussels, 1910, cited in Legge: Carbon Disulfide Poisoning, Nelson's Loose Leaf Medicine, New York, p. 491; also in Hamilton, Alice: Industrial Toxicology, New York, Harper & Brothers, 1934, p. 241.

19. Quarelli, G.: Intossicazione da solfuro di carbonio nelle lavorazione della seta artificiale, Med. d. lavoro **21:** 247 (June 30) 1930.

20. Devoto, L.: Schwefelkohlenstoff und Nebenniere (Addisonische Krankheit), Arch. f. Gewerbepath. u. Gewerbehyg. **5:** 429 (Dec.) 1934.

21. Weise, Werner: Gastro-Intestinal Disturbances Caused by Chronic Inhalation of Carbon Disulfide and Hydrogen Sulfide, Arch. f. Gewerbepath. u. Gewerbehyg. **4:** 219 (Jan.) 1933; abstr. J. Indust. Hyg. & Toxicol. **15:** 32, 1933.

22. Ranelletti, A.: Industrial Poisoning by Carbon Disulfide in Italy, Arch. f. Gewerbepath. u. Gewerbehyg. **2:** 664 (Dec. 17) 1932; abstr. J. Indust. Hyg. & Toxicol. **15:** 5, 1933.

headache, dizziness, severe occipital or frontal headache, pain in the limbs, increase or diminution in superficial and deep reflexes, incoordination, tremor (a coarse intention or a static tremor), palsies or weakness of various cranial and spinal nerves, especially the facial, involvement of the optic tracts, muscular weakness, especially the flexors of the hands and feet, hyperesthesias, paresthesias, muscular twitchings or a polyneuritic syndrome (Duchenne de Boulogne,[6] Harris,[23] Bonhoeffer [24]), disturbances of the intestine and bladder and parkinsonian syndrome (Ando-Gionotti,[25] Negro,[26] Quarelli,[27]). There may be alternation of irritability with paresis of the muscles. The combination of headache, visual disturbance and gastrointestinal disorders may simulate brain tumor.[28]

Of special note are eye symptoms, which appear early—fatigability at near vision, diminution of visual acuity, distortion of images, colored rings about objects, fogginess, scotomas, retrobulbar neuritis and pallor of the temporal disks (Monbrun, Richet and Faquet,[29] Monbrun and Faquet,[30] Nectoux and Gallois,[31] Krause [32]).

PSYCHIC DISTURBANCES

In fully half of the reported cases there was mental disturbance of much severity, varying in degree and persistence such as to be outstanding. Delpech drew attention to the similarity in behavior in some of his cases to that of acute alcoholic intoxication. He used the term "ivresse sulphcarbonée" to describe the tipsiness, overtalkativeness and unmotivated happiness or joy which he observed or which were described by the fellow workers of some of his patients. Laudenheimer observed that "the psychic changes may appear with slightly preceptible but with increasing intensity over a period of several days," showing a definite prodromal period. "One is confronted with a lack of inhibition (ausgelassenkeit)." There may be excitement and increased psychomotor activity, flight of ideas, outbreaks of irritability and unmotivated rage. On the other hand there may be somnolence, semistupor or simply forgetfulness and retardation and intellectual impairment.[24] Periods of amnesia, sleeplessness, sleep reversal, horrible dreams and anxiety states may precede the onset of definitive psychosis. The psychoses may be characterized by a definite manic depressive picture, with either manic or depressive symptoms or an agitated depression. Visual and auditory hallucinations and delusions of persecution may color the picture; delirium may occur or a schizophrenic syndrome with catatonic excitement. A simple dementing process may develop with quantitative mental loss, without other striking features. The preponderance of patients exhibited varying degrees of mental impairment with torpor, hebetude, inability to concentrate, memory defects and irritability even when psychosis did not become full blown. One of Peterson's [1] patients who had the delusion that his tongue and lungs were gone, nevertheless comprehended the falsity of his belief. Clinically there is marked resemblance between carbon disulfide poisoning of low grade chronic type and asthenia or neuralgia. In cases in which the symptomatology is not advanced or dramatic in its manifestations its general features may be mistaken for neurasthenia and its local manifestations for various neuralgias. This is especially true if the neurologic signs are larval, inconstant or evanescent or do not correspond to any definite syndrome. Similarly psychic symptoms may be mild, neurasthenoid or hysteriform.

In 1888 Charcot,[33] in one of his Leçons du Mardi, presented a case of alleged hemiplegia in a rubber worker due to carbon disulfide. He demonstrated that neither the paralytic signs nor the sensory changes fitted in with the usual picture of hemiplegia or hemianesthesia. He made the comment that there was in Delpech's and in later reported cases an insufficiency of real clinical evidence supported by neuropathologic changes to warrant these cases being called hemiplegia. Both Charcot and Marie [34] regarded the incongruity and heterogeneity of signs and symptoms as proof of their hysterical origin, especially in view of the coexistence of sexual disturbance. The power and persuasiveness of Charcot's psychiatric philosophy were sufficient, for the time, to cast doubt on the value of the neurologic and psychiatric observations of Delpech, an able hygienist and industrial toxicologist of a previous generation. While Charcot admitted that there were disorders of the central nervous system definitely ascribable to the action of carbon disulfide, he felt that a differentiation should be made between the organic neurologic damage, measurable by clinical analysis on the one hand, and the symptomatology, much of it of a psychiatric nature, imponderable and nonspecific, on the other. The signs and symptoms of any neuropsychiatric disorder which did not in his opinion conform to a well defined clinicopathologic disorder were ipso facto hysterical in nature. With inexorable logic he applied the same criteria to other toxic agents, namely, alcohol and lead. Just as there could be traumatic epilepsy, there could be traumatic hysteria (neurosis). By the same token he held that there was a lead hysteria, an alcoholic hysteria, a carbon disulfide hysteria. In other words, hysteria was the common denominator of the bizarre, the incoherent and the disturbing elements which prevented the exacting clinician from fitting the patient into the contemporary neuropathologic scheme of things. Since hysteria, according to Charcot, was such a common disorder, he felt justified in denying the specificity of the action of carbon disulfide and declared that this substance, in common with alcohol, lead and trauma, was merely an *agent provocateur* of hysteria. Charcot's masterful clinical judgment, however, could not be dulled by too close an adherence to his own logic, for he expressed the opinion that hypnotism could not be expected to do much for this type of hysteria. This is practically a tacit admission that the usual form of hysteria was different from this type.

From a modern point of view, one can look on the neurasthenoid and hysteriform symptoms as the primary response of the organism to a disruption in the internal milieu and a disorganization of the relative chemical stability of the neurons of the higher cerebral centers

23. Harris, Wilfred: Toxic Polyneuritis, Brain **45**: 415 (Dec.) 1922.
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and association pathways and the vegetative nervous system with its adrenal connections.

These early psychic symptoms are either irritative in character or a resultant of the suppression of the usual inhibitory functions of these higher centers, or a mixture of the two. If the toxic action is further continued, one has evidence of psychotic behavior. The result is not only a quantitative matter, in the sense of the amount of toxin absorbed, but qualitative in the sense that any or many cerebral areas may be simultaneously or haphazardly affected. Major psychotic phenomena may be delayed for years, as in Abe's case, in which a Korsakoff syndrome developed after thirteen years' exposure.

Three groups of symptoms, namely, the somatic, the neurologic and the psychic, have been noted. Generally characteristic of this diagnostically is the occurrence of symptoms of two and usually all three varieties. Differential diagnosis is to be made from chronic alcoholism, lead poisoning, neurosyphilis, brain tumor, polyneuritis of other origin and postencephalitic parkinsonism, so protean are the manifestations of carbon disulfide poisoning.

A word concerning prognosis: It depends on the age, general bodily health and promptness with which the poisoning is detected and the removal of the worker from the deleterious atmosphere. In many instances the somatic and neurologic disorders disappear after the workers are removed from exposure to the toxic agent. Brief exposure may, however, have long continued or permanent sequelae. Tolerance is not established or, if so, only rarely. On the contrary, there is an increased susceptibility to poisoning on further exposure. Women are more susceptible and show a greater incidence of psychic disorder. The psychosis may be permanent (Peterson, Laudenheimer, Koester, Abe).

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938

REPORT OF CASES

We ourselves have seen the following cases:

CASE 1.—*History.*—A. C., a woman, aged 27, married ten years, the mother of three children aged 9, 7 and 3½ years respectively, had had generally good health and no illness during her pregnancies. She had been working in the rayon industry for years as a reeler of artificial silk. The onset of the present illness was of the acute type. One day she handled spools of incompletely dried viscose. Symptoms began with violent headache, faintness and then loss of consciousness. Shortly before losing consciousness she remembers being very restless, weeping, screaming and laughing. After recovering consciousness she felt as though she had been beaten all over. A little later she spit blood and had bloody bowel movements. She was semiconscious and stuporous the greater part of that day. Since that time she has had repeated spells. They last from fifteen to twenty minutes and consist of headache and numbness in various parts of the body, and her hands and feet feel as though they were asleep. She has auditory hallucinations; her eyes feel jumpy and twitchy; black spots dance before her eyes; she has cold sweats and is contrary. Her behavior apparently had been so erratic and bizarre that commitment to the state hospital was seriously considered. As a result of her mental abnormality she has been separated from her husband.

Physical Examination.—The patient is somewhat thin, has a reddish blond complexion, and her skin has a peculiar cyanotic hue, the color of heliotrope. During the examination this alternated with pallor, showing vasomotor instability. The gastrointestinal and cardiovascular systems were essentially normal. The blood pressure was 110 systolic, 65 diastolic.

Neurologic Examination.—The pupils were regular, somewhat dilated, and reacted to light and in accommodation; extra-ocular movements were normal, the conjunctivae were of a grayish pallor and there was corneal anesthesia. The cranial nerves were normal; tendon reflexes were exaggerated; there was no clonus and the Babinski sign was not present; there was a suggestion of Troemner's sign on the right; there were no definite sensory objective signs with the exception of the fact that she seemed to be indifferent to pin pricks throughout the body.

The Wassermann reaction of the blood was negative. The blood count revealed: hemoglobin 70 per cent, red blood cells 5,050,000, white blood cells 10,600. The differential smear was normal. Examination of the urine showed a trace of albumin and from 400 to 500 pus cells per low power field; otherwise the urine was essentially normal.

Summary.—A woman worked for six years in a viscose plant and was subjected to acute exposure to vapors of carbon disulfide; marked symptoms of intoxication developed accompanied by and followed especially by severe psychotic episodes. Neurosomatic manifestations are a simple secondary anemia, vasomotor instability, corneal anesthesia and paresthesias. She has psychotic episodes characterized by hallucinatory phenomena.

CASE 2.—*History.*—D. G., a woman, aged 23, married, had been a viscose worker for eleven months. Dec. 23, 1933, while at work, she noticed that she felt dazed and her mind seemed to wander. She retired to the rest room for a short time and when she came back to work there was a return of symptoms. She began to laugh and cry and feel sleepy. She retired to the rest room again and reported to the nurse, asking for a tablet of acetylsalicylic acid. When she returned to work her symptoms were worse and she wept continuously; she was taken home and became comatose and remained so for a week. Since that time and after immediate recovery from the acute phase she has had episodes, especially at the time of the menses, of patchy areas of dysesthesia over various parts of the body, headaches, a jumpy feeling in the head, a feeling as though her eyes would pop out of her head, blurred vision, and a sensation that the "brain seems dull and flat," and she is very irritable and states that she goes out of her senses for a period of about half an hour. The length of the attacks varies from half an hour to three hours.

Examination.—Physical examination revealed acne of the face, but the results of the general somatic examination were essentially negative. Neurologically there were exaggerated tendon reflexes; there was no ankle clonus and the Babinski sign was not present; a generalized hypesthesia, poor vision of the right eye, pallor of the right optic disk and gross contraction of visual fields (retrobulbar neuritis) were noted.

The Wassermann reaction of the blood was negative. The blood count revealed: hemoglobin 74 per cent, red blood cells 4,110,000, white blood cells 8,100. A differential smear was normal. Examination of the urine showed a trace of albumin and from 75 to 100 pus cells per low power field; otherwise the urine was normal.

Summary.—In a woman worker in a viscose factory for eleven months, acute pseudo-emotional disturbance and severe coma developed followed by episodes of headache, dysesthesia, visual disturbance, irritability, psychotic behavior and retrobulbar neuritis.

CASE 3.—*History.*—I. W., a married woman, aged 33, the mother of two children aged 3 and 10 years, had worked on and off in a viscose plant for about two years. On the same day as in the other cases headache and then inability to move any of her muscles developed. She was aware of her surroundings but was unable to talk. Objects about her appeared to become of tremendous size and then to become extremely small. She had to be taken home from the plant. She was unable to see until the next morning; when she recovered her vision, objects appeared to be distorted, as though she were "looking through isinglass." She was unable to urinate for four days, her arms and legs went to sleep and she was unable to move them. She described herself as feeling as though she had been beaten severely all over her head. It was difficult for her to breathe and she felt as though she had asthma. When she felt respiratory difficulty some one gave her artificial respiration. Since then she has had episodes of numbness in her hands and feet, she feels as though her eyes vibrate, and she has episodes of crying and sleeplessness. Her behavior

is peculiar and she often goes to sleep half dressed, is depressed and morose and is very susceptible to odors. Because of her behavior she was referred to and attended the clinic of the state hospital every week for three months. Physical examination and neurologic examination were essentially negative.

The Wassermann reaction of the blood was negative. The blood count revealed: hemoglobin 80 per cent, red blood cells 4,650,000, white blood cells 9,200. The differential count was normal. Examination of the urine showed a trace of albumin; otherwise it was negative.

Summary.—A woman viscose worker suffering from acute intoxication manifested headache, lilliputian and brobdingnagian visual hallucinations, amblyopia, distorted vision (wavy vision), paresthesia of the limbs with muscular weakness, paralysis of the bladder and respiratory embarrassment as immediate symptoms.

Following recovery from the acute phase, the residual symptoms are paresthesias of the limbs and eyes, emotional outbreaks, episodes of sleeplessness, depression, forgetfulness and larval psychotic behavior. Neurologic signs are absent.

CASE 4.—*History.*—C. A., a man, aged 42, worked in the rayon industry three years, much of his work consisting in the installation and repair of the ventilating system in a new rayon plant. Within the first six months he began to have symptoms, with two periods of greater severity. He began to have blurring of vision, pain and burning in his eyes, headache, "nervousness," a sensation of seasickness and occasional vomiting. He was unable to sleep or rest and later he had reversal of sleep and marked fatigability. He began to have episodes of depression, noticed by his wife as well as himself, and was extremely irritable toward his children. A feeling of stiffness and pain developed in his limbs, especially in the tendons of his legs, the sensation being described as feeling as though he had run a long race. His vision gradually diminished so that he had only light perception in his right eye. Visual images in the left eye appeared as though distorted by heat waves. About six months after he began this work he began to notice a progressive diminution in libido and episodes of general depression, beginning about the same time and continuing after he left the industry. His depression is at times relieved when he is actively occupied.

Examination.—The right pupil is larger than the left, slightly irregular and reacts sluggishly to direct light but well consensually. The left pupil is fairly regular and reacts well to light. There is loss of vision over the nasal field of the right eye. The field of the left eye was not affected. The right eyeground showed a retinochoroiditis with marked blurring and loss of outlines of the nerve head. The left eyeground showed pallor of the temporal disk. There was corneal anesthesia, the ocular and palpebral conjunctivae of both eyes being thickened. Other cranial nerves were grossly normal. Muscular power was good throughout. There was hyperreflexia, no Troemner or Babinski signs, no ataxia, and no disturbance in any of the modalities of sensation, with the exception of generalized hyperesthesia. The cremasteric reflexes were considerably diminished. The skin showed dermatographia. The thoracic and abdominal viscera were normal. The blood pressure was 145 systolic, 85 diastolic.

Summary.—A man, engaged principally in installation and repair of the ventilating system in a viscose plant, showed symptoms of chronic intoxication with blurring of vision (wavy vision), headache, nausea, vomiting, sleep reversal, fatigability, depression, neuritic pains, considerable loss of vision, retrobulbar neuritis, choroidoretinal pathologic changes and diminution of libido.

CASE 5.—*History.*—E. B., a woman, aged 32, was employed off and on for seven years in the rayon industry, the last time for a period of three years. She stopped work Feb. 21, 1934. For three months in 1933 she was in the reeling room, for the last three months in 1933 in the coning room and for the first two months in 1934 in the reeling room.

After two months in the reeling room she began to have "nervous spells," which consisted of irritability and causeless weeping. She had sore throats and colds and she has not been free of bronchial trouble since; she has a constant sensation of rawness in the throat. She began to feel that she was going crazy. She had frequent experiences in which she had lapses of memory; she would find herself some place and did not know how she had gotten there; for example, she would have a knife in her hand and would not remember how it had occurred. Frequently at work she would have surges of causeless rage and she felt as though she would like to smash the reels. She had a strange sensation in her feet; she felt as though there was nothing underfoot when she walked, and severe dizziness and intense headaches developed. She had double vision and also "things appeared to have a wavy appearance." She was constantly apprehensive of going crazy and had frequent momentary flashes of unconsciousness. She had severe pain in the chest and felt as though her chest was in a vise and was being crushed. These episodes were so severe that she had to stop work for three or four months. She has a residual of this sensation at present under the right shoulder blade. She feels as though there is a hole in her chest and that she is blowing her breath through it. She is dyspneic. She had sensations in which she felt as though objects were moving down her arms and legs. She has had persistent chronic fatigue during which time she felt "dopy," and if she did not lie down she would fall off her feet. Even now her spells of fatigue are so severe that she becomes indifferent to everything about her. She has had one cold after another. During the summer of 1934 she had severe dysmenorrhea every month with very black discharge (this condition was relieved by diathermy treatments).

During this time she had severe anorexia but her appetite has improved in recent months. When she feels better she is able to do her housework but frequently is so fatigued for no reason at all that she cannot do it.

During one of the periods in which she was in the converting department she had to write the simplest things down because her memory was so defective. For two years while she was working and after she stopped working she has been unable to sleep well. Since that time she has lost all sexual desire.

Examination.—The patient is rather tall, fairly well built and is fairly alert and answers questions intelligently. She weighs 170 pounds (77 Kg.).

The pupils react to light and in accommodation; extraocular movements are normal. There is bilateral corneal anesthesia. The pharyngeal reflex is absent. The pharynx is pale with hyperemic spots (chronic pharyngitis). The cranial nerves are otherwise normal. There is no ataxia and no evidence of cerebellar dysfunction except for a slight Romberg sign. The biceps, triceps, knee and ankle jerks are present and active. There is no disturbance in any of the modalities of sensation.

The Wassermann reaction of the blood is negative. The blood pressure is 98 systolic, 70 diastolic.

Summary.—In a woman who worked with viscose, subjected to chronic exposure to vapors of carbon disulfide, the following symptoms developed: crying spells, causeless rage, double vision, vertigo, intense headache and oppression of the chest, paresthesias, corneal anesthesia, chronic fatigue, loss of weight, defective memory, loss of libido, hypotension, irritability, chronic irritation of the mucous membranes of the nose and throat and mental phenomena consisting of petit mal episodes.

CASE 6.—*History.*—E. S., a man, aged 49, foreman in a viscose factory who worked principally in the reeling room, first became ill in April 1933. Headache, vertigo, rapid loss of weight, and paresthesia in his hands and feet developed. With this there was also insomnia, causeless weeping and night terrors; he had achiness in his bones for months. For some time he felt that his mind was not working properly. Both his wife and his son have noticed that his actions have not been normal and have told him about his crying and screaming while sleeping and that his body shakes all over. His memory is unreliable. He describes episodes resembling fugues in which he finds himself at some place and can't remember how he got there. He is now unable to drive a car because he is uncertain of himself. He complains of dyspnea and a sense of oppression in the chest. He also has episodes of blindness lasting for a few minutes and also double vision. He is unable to retain a position because of his memory faults. He has a marked diminution of libido.

Examination.—The patient is fairly well built and gives evidence of having lost weight, his present weight being 156 pounds (71 Kg.). The pupils are regular and react to light and in accommodation; the eyegrounds show slight pallor of the temporal disks and slight atherosclerosis. The cranial nerves are otherwise normal except for mild tremor of the tongue. There is no ataxia or other evidence of cerebellar dysfunction. The biceps, triceps, knee and ankle jerks are present and equal; there are no pathologic reflexes and no disturbances in any of the modalities of sensation.

The blood pressure is 150 systolic, 100 diastolic.

Mental Status.—The patient tends to be morose, apathetic and somewhat indifferent and his thought processes are retarded. He is oriented in all spheres but his memory is definitely dulled. He finds it difficult to place various occurrences in the past in any sort of proper sequence. He formerly had the reputation of being a first class worker and had the ability of handling other employees; now he has a marked lack of initiative and a sort of childlike dependence on others.

Summary.—A man who worked with viscose and was subject to chronic exposure to carbon disulfide fumes acquired headaches, vertigo, loss of weight, paresthesias, insomnia, causeless weeping, night terrors, fugues, petit mal episodes, depression, impairment of memory, loss of initiative and impairment of libido. The neurologic examination was negative.

COMMENT

These six cases may be divided into three so-called acute and three chronic forms of this disorder. In all six there is a relative paucity of neurologic signs. Two patients showed corneal anesthesia. The visual disturbances are noteworthy; two patients complained of what might be termed "wavy vision," two had retrobulbar neuritis, and in one acute case lilliputian and brobdingnagian hallucinations (or illusions) were present. As far as we are aware, "wavy vision" and this type of hallucination has hitherto not been reported in carbon disulfide poisoning.

Especially noteworthy is the periodic or cyclic character of psychotic episodes accompanied by a variety of paresthetic or hallucinatory phenomena, which were sequelae in four of the cases. Chronic fatigue and asthenia is present in two of the cases, amnesic features in two and progressive mental deterioration with memory defects in one of the cases. In four there is diminution or loss of libido. All of the patients are invalids.

Two and one-half years ago we urged the federal authorities of the need for a survey of the toxic hazards in the viscose industry. More recently, Dr. Adele Cohn [35] in her Bryn Mawr survey found thirty cases of psychosis which developed in one viscose plant. At present a federal survey of the rayon industry is being made which will be of inestimable help to all who are interested in the prevention, early diagnosis and treatment of carbon disulfide poisoning.

The mode of action of carbon disulfide is clear; it is lipotrophic and hence neurotoxic. This is to be inferred a priori from its physicochemical properties; it is demonstrated by the pathologic material in experimental animals and in man. Until a few years ago, most authorities relied on the quantitative experimental work of Lehmann on animals. His rats did not tolerate an atmosphere containing 1 mg. of carbon disulfide per liter of air for an eight or nine hour exposure. The inspection service of the British factory department [36] in 1934 still uses these figures [37] and states that "an atmosphere of 322 to 386 parts per million produces slight symptoms after several hours; and 483 to 802 parts per million is the maximum concentration that can be inhaled for one hour without serious disturbance." As a footnote the carbon disulfide memorandum adds that "these are for acute effects; exposure of several hours a day to concentrations lower than those mentioned leads in a short time to chronic poisoning." No definite figures are given for chronic exposure.

Wiley, Hueper and von Oettingen in their 1936 experiments on rats and mice have demonstrated that the permissible upper limit is 0.1 mg. per liter (32 parts per million) for exposures longer than Lehmann's.

Zhitkova [38] in 1933 reports that a total of 5 mg. has induced poisoning in man and further states the upper limit of safety as 0.01 mg. per liter of air to be the official standard of the Soviet government.

Voltmer and Nuck [39] in 1933 reported a survey in which simultaneous studies were made of atmospheric working conditions and physical examinations of workers in a rubber factory in Germany where carbon disulfide was used. Sampling of the air repeatedly showed figures below 1 mg. per liter of carbon disulfide concentration, at times as low as 0.2 or 0.1 mg. per liter. Of fifty-seven women workers employed for from five months to twenty years, only six were free of symptoms and signs of illness. All complained of fatigue and 70 per cent suffered from visual and gastrointestinal disturbances. From 20 to 40 per cent complained of headache, nausea, vomiting, memory defects and sensory disturbances including dysesthesias. This clinicotoxicologic study is one of the few that indicate chronic toxicity levels.

Two factors of importance complicate the translation of results of experimentation on animals to man, especially in chronic intoxication.[40] The first is the imponderable one, namely, that there can be no psychopathologic changes in animals with the exception of apes or conditioned animals. The vast panorama of neuropsychiatric symptomatology in carbon disulfide poisoning can be only partially illuminated by animal intoxication. The other factor that seems to have been neglected is the relationship of the weight of the nervous system, particularly the cerebrum, to the total body weight of animals in contrast to that of man. Human neural tissue with its vascular supply is capable of absorbing and fixing a relatively greater quantity of circulating neurotoxin than the nervous system of animals.

Our knowledge is sufficient for the establishment of minimal health standards of carbon disulfide in industry. Until such standards become established, in our opinion, the concentration of carbon disulfide in the atmosphere must be kept well below 0.1 mg. per liter of air, preferably around 10 parts per million (0.03 mg. per liter). In addition, frequent examination of workers must be maintained to detect the early symptoms of chronic poisoning.

856 North Fifth Street—921 Medical Arts Building.

35. Cohn, Adele: Supplement to Report of Governor's Commission of Pennsylvania on Occupational Disease Compensation, 1937.

36. Memorandum on Precautions Against Dangers of Poisoning, Fire and Explosion in Connection with the Use of Carbon Bisulfide in Artificial Silk, India Rubber and Other Works, London, His Majesty's Stationery Office (form 836), March 1934.

37. One mg. of carbon disulfide per liter of air equals 322 parts per million at 25° C. (Haggard and Henderson: Toxic Gases).

38. Zhitkova, A. S.: Some Methods for the Detection and Estimation of Poisonous Gases and Vapors in the Air, translated by Joseph B. Blicklen, Hartford, Conn., p. 62.

39. Voltmer and Nuck: Studien ueber die Frage der Gesundheitsschaedigungen von Arbeitern bei der Vulkanisation von Gummiartikeln, Reicharbeitblatt **3**: 2, 1933, cited by Wiley, Heupner and von Oettingen.[15]

40. Gordy, S. T.: Neuropsychiatric Aspects of Intoxications by Lipoid Solvents, in Trumper's Memoranda of Toxicology, ed. 3, Philadelphia, 1937.

UNDULANT FEVER

ITS TREATMENT WITH SULFANILAMIDE

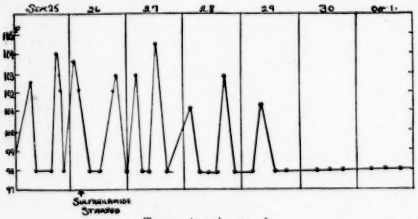
ROBERT L. STERN, M.D.
AND
KEN W. BLAKE, M.D.
LOS ANGELES

The medical treatment of undulant fever has not included, as yet, any drug of relative therapeutic safety that is specific in vivo against the causative organism of the disease, Brucella melitensis.

Brucella melitensis, originally known as Micrococcus melitensis, is pleomorphic, its morphology in part determined by the culture medium or the preparation used for its study. Morphologically it is considered variously by several authorities [1] on bacteriology to be a coccus, a bacillus or a coccobacillus. On this basis, with the effect of the drug in question established against certain other pathogenic bacterial forms, we, working independently, gave sulfanilamide in therapeutic doses to each of three private patients suffering from clinically and serologically established undulant fever. The following highly satisfactory and prompt results are reported:

REPORT OF CASES

CASE 1.—Miss M. R., white, aged 24, a movie actress, first seen by R. L. S. Sept. 5, 1937, stated that she had been in good health until September 3, when she felt feverish and chilly and had generalized muscular aching. The next day these symptoms continued and she also experienced a moderate



Temperature in case 1.

frontal headache and stuffiness in the nose. In the afternoon her fever peak was 103 F. An inventory by systems revealed no other complaints. She had never experienced a serious illness or operation, but three weeks previously she had a tooth extracted, with subsequent vague aches and a temperature to 101 F. for three days. The patient was well developed and well nourished; she appeared feverish and was perspiring profusely. The afternoon temperature was 102 F., the pulse rate 100 and the respiratory rate 20. The blood pressure was 110 systolic, 70 diastolic. Thorough physical examination revealed no abnormalities other than slight enlargement of the anterior cervical lymph glands and some tenderness of the leg muscles. The urinalysis revealed normal conditions. The Wassermann reaction was negative. Study of the blood showed the erythrocyte count to be 4,520,000 per cubic millimeter of blood and the hemoglobin 83 per cent. The leukocyte count was 6,100 per cubic millimeter of blood with a differential count of 68 per cent polymorphonuclear neutrophils, 2 per cent polymorphonuclear eosinophils, 26 per cent small lymphocytes and 4 per cent monocytes. Several subsequent examinations of the urine and blood revealed the same essentially normal results. Despite conservative treatment with salicylates and supportive measures the fever continued, and at the end of two weeks a regular daily occurrence of afternoon chill followed by a temperature of from 102 to 104 F. for several hours, with rapid subsidence to normal in the early evening hours, had been established. During the morning she felt perfectly well and had no fever. Except for severe night sweats she had no other symptoms or complaints. Her appetite remained excellent and she ate heartily, according to instructions, so that despite the continued fever no loss of weight occurred during her illness. During this period physical examination had failed to reveal any additional abnormal changes except a marked coating of the tongue, halitosis, the daily fever and profuse sweats. At the end of the second week the peculiar pungent odor of the perspiration first gave the impression of probable undulant fever. X-ray examinations of the chest had revealed no abnormalities. Culture of the blood had remained sterile. Culture of the stool had revealed no growth of typhoid or dysentery bacilli. In the third week agglutination tests for the typhoid and paratyphoid group of organisms were negative, but the agglutination for undulant fever was found to be strongly positive in dilutions to 1:1,280, beyond which it was not carried. A temperature chart was kept; during the second and third weeks it disclosed daily rises of from 102 to 104 F. As soon as the diagnosis was established, on the twenty-first day following the onset of symptoms, the patient was started on a regimen of sulfanilamide, which included 40 grains (2.6 Gm.) the first day, 60 grains (4 Gm.) the second, 80 grains (5.2 Gm.) the third, 40 grains the fourth and then 20 grains (1.3 Gm.) daily for one week more, each day's total in divided doses. During this period all other drugs were stopped. For the first three days the fever and chills continued, but on the fourth day after a noon rise of temperature to 101 F. for one hour, the lowest peak in two weeks, the temperature dropped to normal, and from then on no further chills or fever were experienced. At the patient's last visit, six weeks after becoming symptom free, she continued to feel very well and weighed 6 pounds (2.7 Kg.) more than she had at the onset of illness. Her source of infection was apparently raw milk, bought from a "fly by night" dairy which had changed hands several times during the past four months.

CASE 2.—T. S., a man, aged 47, a miner, first seen by R. L. S. Oct. 5, 1937, stated that he had felt perfectly well until Aug. 5, 1937, when general aching and fever developed. He consulted a physician, who told him that he had some congestion in the lungs. He was able to be up and about but continued to have a daily fever and felt poorly. During the latter part of September he went to the desert and attempted to work but suffered a severe exacerbation of symptoms. For one month before he was seen here he had severe daily chills, an afternoon fever accompanied by drenching sweats, and almost constant backache. Between the chills he felt fairly well. He had lost 20 pounds (9 Kg.). At the onset he had a severe cough, which when first seen had eased to his usual "cigaret cough." An inventory by systems revealed no other complaints. The only relevant past history was gonorrhea in 1911 and a herniorrhaphy in 1934. He had eaten at several restaurants and hotels during the month previous to his illness but had ingested no known raw or goat's milk. The patient was gaunt and appeared exhausted; he perspired freely on exertion and had a short, loose cough. The afternoon temperature was 99.8 F., the pulse rate 88 and the respiratory rate 18. The blood pressure was 118 systolic, 80 diastolic. The observations were otherwise essentially negative with the exception of injected sclerae and a few variable coarse rales in each lung base. A blood count gave normal results Urinalysis showed a trace of albumin but was otherwise essentially negative. Fluoroscopy of the chest revealed only heavy bronchial markings. A tentative diagnosis of undulant fever was made and the patient was given salicylates and instructed to keep a temperature chart. A daily fever of from 99 to 100 F. was recorded each afternoon during the two day interval necessary for the agglutination tests. October 7 the reports were returned, disclosing a negative agglutination for the typhoid and paratyphoid group of organisms and a positive agglutination for undulant fever in dilutions to 1:1,280, beyond which it was not carried. On the basis of the experience with

1. Hiss, P. H., and Zinsser, Hans: Textbook of Bacteriology, New York, D. Appleton & Co., 1931, p. 795. Kolle, W., and Hetsch, H.: Experimental Bacteriology, ed. 7, New York, Macmillan Company **1**: 359, 1935. Jordan, E. O.: A Textbook of General Bacteriology, ed. 10, Philadelphia, W. B. Saunders Company, 1931, p. 365.

case 1, the patient was placed on a regimen of sulfanilamide. His weight was 167 pounds (76 Kg.); he was, therefore, given 60 grains the first and second days, 80 grains the third, 40 grains the fourth and then 20 grains daily, each day's total in divided doses. All other treatment was discontinued. The drug was started on the evening of October 8. On October 12 he reported that he had experienced no fever, chill or other ill feeling for the past twenty-four hours. He has subsequently remained well, with no elevation of temperature noted to the present time. The daily 20 grain dosage of sulfanilamide was continued for six days into the afebrile period and then a dosage of 15 grains daily was continued for six days more. Since the cessation of the fever the patient has regained 10 (4.5 Kg.) of the 20 pounds (9 Kg.) of weight lost. It was impossible to trace the source of the patient's infection, since he had eaten in a number of establishments during the several months preceding the onset of symptoms.

CASE 3.—H. F., a white man, aged 38, first seen by K. W. B. at 3 p. m. on May 16, 1937, complained of the sudden onset of a chill and fever three weeks previously after having bathed in the ocean. He had since had a daily afternoon fever, reaching 103 F. on several occasions. He was growing extremely irritable, nervous and depressed. Having been on a starvation diet at the direction of an osteopath, he had lost from 15 to 20 pounds (6.8 to 9 Kg.). A migratory "twanging" pain which was noted in the abdomen was localized in the left upper quadrant at the time of this examination. Inquiry by systems revealed a severe constipation, for which laxatives had been taken daily for several years, but he had no other complaint. He stated that he had been drinking raw milk from a small dairy for the past five years and had eaten much ice cream. He had no access to the handling of raw meats. His past history revealed a "nervous exhaustion" in 1931 but no other illnesses, operations or accidents. Typhoid vaccine had been administered while he was in the army in 1918.

The patient was tall, thin, extremely irritable and nervous. He appeared to be acutely ill. The temperature was 101.4 F., the pulse rate 84 and the respiratory rate 18. The skin was dry and warm and presented several small nevi over the anterior chest wall. Thorough physical examination revealed a dry and coated tongue, a few fine rales in the left base of the chest posteriorly and a diffuse tenderness in the left upper quadrant of the abdomen in the region of the spleen. The blood pressure was 122 systolic, 82 diastolic. The observations otherwise were essentially negative. The erythrocyte count was 4,890,000 per cubic millimeter of blood and the hemoglobin was 85 per cent Sahli. The leukocyte count was 5,750 per cubic millimeter of blood with 64 per cent polymorphonuclear neutrophils, 3 per cent polymorphonuclear eosinophils, 31 per cent lymphocytes and 2 per cent monocytes. Urinalysis revealed a specific gravity of 1.025 and an occasional leukocyte but no albumin, sugar or casts. A macroscopic agglutination test of serum versus Bacillus abortus on May 18 revealed complete agglutination in dilutions from 1:20 to 1:5,120. The blood Wassermann reaction was negative. The patient was treated symptomatically until May 22, when a course of sulfanilamide was undertaken. During the following thirty-six hours he was given 105 grains (7 Gm.) of the drug in 15 grain doses. Owing to the onset of a slight vertigo the administration was stopped at 9 p. m. By the following morning the temperature was again normal, where it has remained to the present time. He was able to return to his work one week later and when he was last heard from, November 15, he had gained approximately 30 pounds (13.6 Kg.) and had experienced no evidence of a recurrence. The only other drug used during this entire time was a mild barbituric sedative.

CONCLUSIONS

1. Three patients with undulant fever were treated with sulfanilamide in tablet form with prompt clinical cure of the disease during the administration of the drug.

2. The maximum dosage according to present standards appears to be necessary.

727 West Seventh Street—1930 Wilshire Boulevard.

Clinical Notes, Suggestions and New Instruments

CHIN TO CHIN LOCKING OF TWINS

H. E. BOWLES, M.D., HONOLULU, HAWAII

This report has been promoted by a recent statement of Peters [1] to the effect that he has been unable to find a single report of interlocking of twins in American obstetric literature. Furthermore, he brings out the fact that the Index Catalogue of the Library of the Surgeon General's Office covering the years 1912 to 1932 lists only three articles referring to this obstetric complication. All these are in the Swedish literature.

According to von Braun, the accident occurred in Vienna once in 90,000 labors. Coleman [2] in 1935 reported two cases in each of which the two fetal heads attempted to engage in the pelvis simultaneously. A commoner type is the descent of one fetus as a breech. Various combinations are possible. Our case presented chin to chin, with the second fetus attempting to enter the pelvis before the head of the first had been delivered. Peters' case was of this type. In his case the anomaly was detected in time to save both the mother and the twins by cesarean section. If the mother and the babies are to be saved, the diagnosis of locked twins must be made early. It is facilitated by a previous roentgenogram. Every case in which a plural pregnancy is suspected should be given this aid to diagnosis. For a discussion of various steps in delivery of locked twins, the reader is referred to obstetric textbooks, which usually cover the subject thoroughly.

REPORT OF CASE

The patient was delivered vaginally of twins with locked heads, chin to chin. The first child was a double footling, and the second presented by its head.

Miss R. H., aged 19, a primipara, Caucasian-Hawaiian, was seen at one of Honolulu's antepartum clinics twice prior to the onset of her labor. Her menstrual history had been negative. Her measurements were normal. The estimated date of confinement was December 25. Diagnosis of twins was not made by her physician during her two visits to the antepartum clinic December 11 and 18. Labor commenced about 8 p. m. December 26, and she remained at home until her admission to the hospital December 27 at 4:35 a. m. Normal contractions continued with but little inconvenience. The membranes ruptured spontaneously at 11:15 a. m.

The first inkling that there was anything peculiar about her case came at noon, when a small fetus presented feet first. It was expelled as far as its shoulders. Nitrous oxide anesthesia was used at this stage. Strong contractions continued. Digital examination revealed a second fetal head, and the chins of the two could be clearly palpated with the heads completely locked chin to chin. Under ether anesthesia an unsuccessful attempt was made to decompose the deadlock. No pulsation could be felt in the cord of the first fetus, nor could any signs of life be detected. Fetal heart sounds of the second child were listened for but were not heard. The head of the first infant was readily severed by a stout pair of scissors. The head was now pushed up into the uterine cavity and the dependent cord was cut and tied. Ten minutes later the second infant emerged spontaneously. It showed no signs of life at birth. Neither child appeared the least macerated, and it was believed that both died during the labor. The first child weighed 4 pounds 2 ounces (1,871 Gm.) and the second 4 pounds 13 ounces (2,184 Gm.). Both were males. The decapitated head was expelled spontaneously and easily, and the placenta followed shortly after. One placenta was present, with two cords, and a single amniotic sac. A deep median episiotomy was done during the delivery and was repaired immediately after. Convalescence was as smooth as if nothing untoward had occurred. Healing was rapid, and the patient was enjoying good health when last seen, Feb. 19, 1937.

From The Clinic.

1. Peters, Lindsay: Interlocking or Collision of Twins; Dystocia; Low Cesarean Delivery, California & West. Med. **46**: 403 (June) 1937.

2. Coleman, J. S.: Two Cases of Twin Locking, Lancet **1**: 196 (Jan. 25) 1936.

COMMENT

The Index Catalogue from 1912 to 1932 lists only three titles of articles referring to collision or locking of twins, all in Swedish.

Peters' case is the only one in recent years to be reported in the American obstetric literature.

The commonest type is a breech followed by cephalic presentation, in a chin to chin locking.

Peters' case emphasizes the value of careful observation aided by roentgenography and cesarean section when favorable circumstances present themselves.

Our case presents the unfavorable or late stage of the complication in which decapitation of the first is usually the method of choice. The maternal convalescence was uncomplicated.

Early and regular attendance at antepartum clinics is to be urged.

Any patient in whom twins or any other peculiar presentation is suspected should have an antepartum roentgenogram. Any case in which there is a diagnosis of twins should be watched ceaselessly throughout labor.

Cesarean section is the method of choice in delivery if the diagnosis of locking is made early while the infants are viable. If the diagnosis is not made until one or both infants are dead, decapitation or craniotomy is the method least dangerous to the mother.

881 Young Street at Thomas Square.

ACTINOMYCOTIC MENINGITIS WITH A PRIMARY FOCUS IN THE FINGER

REPORT OF A CASE DIAGNOSED DURING LIFE

D. B. MORRISON, M.D., TEKONSHA, MICH.
ARTHUR A. HUMPHREY, M.D., AND JAMES E. BAILEY, M.D.
BATTLE CREEK, MICH.

Actinomycosis of the central nervous system is a rare disorder, although the first case on record was recognized only a few years following the first description of the organism sixty years ago. We have noted 110 cases in the literature. For an exhaustive historical survey and bibliography, the reader is referred to the work of Friedman and Levy [1] in 1936.

We feel that the case presented here is unusual because of the focus of infection, for in nearly all instances the primary site has been in the bones and cavities of the skull or in the lungs. It is also among the relatively few cases in which the diagnosis was made prior to death and in which the patient had not been recognized for some time as being the victim of this disease in a more or less chronic and disseminated fashion.

REPORT OF CASE

History.—A white boy, aged 12 years, admitted to the hospital Sept. 22, 1937, complained of pain in the occipital region, neck and back. These symptoms had been present for about three weeks prior to admission, with short remissions. Anorexia and vomiting had been present for ten days, and the patient had lost 15 pounds (6.8 Kg.). Two weeks before entry the child was taken to the attending physician primarily because of a painless lesion on the terminal phalanx of the left index finger, which had been increasing in size. This resembled a felon. It was incised and through and through drainage established. A thick, brownish pus was obtained, and on admission the finger was still draining.

About eight weeks prior to admission to the hospital, the patient accidentally punctured the finger with a sharp object while working in an onion field. Little note was taken of the injury at that time.

The child had always been thin and underweight. No history of any major illness was elicited.

Examination.—The patient was obviously poorly developed and undernourished and, though acutely ill, was well orientated and cooperative. The weight was 64 pounds (29.5 Kg.).

There was nothing unusual about the skull, nose, ears and mouth. The pupils were equal and reacted, but there was a bilateral papilledema of the fundi. The neck was definitely rigid and there was pain on attempted flexion. The chest and abdomen appeared essentially normal. The left index finger showed small, unhealed incisions on either side of the terminal phalanx. A tumor the size of a walnut was noted in the left antecubital space. This was fixed to the surrounding tissue, and a similar one, somewhat smaller, was noted on the calf of the right leg. Neurologically, the reflexes were hyperactive. A bilateral Hoffman and a positive Kernig sign were present. The Babinski sign was not elicited.

On entry the patient had a temperature of 100.5 F., a pulse of 58, and a respiratory rate of 20 per minute. During the sixteen day period of observation the temperature varied between normal and 104 F. There were days when the patient appeared to be quite comfortable and actually seemed to be improving. Severe headache was a prominent symptom. Six days before death a spastic hemiplegia involving the right side of the neck, arm and leg developed. Diplopia and aphasia developed, followed by coma. Convulsions of the jacksonian type occurred frequently during the last few days and were controlled only by intravenous administration of sodium amytal. The patient died following a convulsion on October 8.

The following laboratory procedures entered into the establishment of the diagnosis: On admission a spinal puncture revealed that the fluid was turbid and under pressure; 25 cc. was removed. The following day this was repeated and the pressure was found to be 550 mm. of water. The Queckenstedt sign was present. Several subsequent taps were performed, with a temporary relief of symptoms. Spinal fluid cell counts ranged from 2,676 per cubic millimeter on the first tap to 7,130 on the final one. Polymorphonuclear leukocytes constituted from 70 to 80 per cent of the cells, and the lymphocytes varied from 20 to 30 per cent. Globulin always occurred at least as a heavy trace, and a funnel-shape pellicle formed in the fluid in a very short time. No organisms could be demonstrated, although repeated efforts were made. Various methods of taking cultures and a variety of mediums failed to grow any colonies. A rabbit inoculated intracisternally showed no evidence of pathologic change when killed seven weeks later and examined post mortem.

September 24 material was taken for a biopsy from the wall of the tumor in the left antecubital space. This proved to be an abscess, and about 28 cc. of a brown, purulent material was removed which seemed to penetrate into the deeper tissues. A cover-slip was placed over this fresh material and the microscopic examination showed a fungus with the typical rays and clubbed borders of Actinomyces. After this discovery similar yellowish clumps were found in the discharge from the initial lesion on the finger.

The blood count on admission showed a mild secondary anemia, and a leukocyte count of 23,700 per cubic millimeter, 88 per cent of which were polymorphonuclear leukocytes and 12 per cent lymphocytes. The urine was normal.

All reported cases of involvement of the central nervous system by Actinomyces have terminated fatally; nevertheless, large doses of iodides were given. Spinal taps afforded only a transient relief.

Necropsy.—The left index finger presented the felon-like lesion previously mentioned. The surgical incision in the mesial portion of the left antecubital space also remained unhealed. The pus containing the actinomyces had been removed from this area fifteen days before death.

Nothing of note was observed in the abdomen or thorax except a small abscess the size of a walnut near the hilus of the right lung. The pus from this abscess was thick and yellow, and fresh preparations demonstrated typical mycelial elements.

The brain showed a marked flattening of the convolutions. The entire base of the brain and the upper portion of the cord were covered with a thick, yellowish, purulent exudate. The fluid in the left ventricle and cisterna, as well as that

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From the Pathological Laboratory of the Leila Y. Post Montgomery Hospital, Battle Creek, Mich.

1. Friedman, E. D., and Levy, H. H.: Actinomycotic Infection of the Central Nervous System: Report of a Case and Review of the Literature, Internat. Clin. 2: 36-61 (June) 1937.

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welling from the foramen magnum, was thick and purulent. The impression gained was that an abscess had ruptured into the left ventricle, but the involvement was so general and marked that this could not be proved. Wet, cover-slipped preparations showed numerous mycelial filaments in the thick fluid.

Microscopic examination was rather disappointing as far as the demonstration of the fungus was concerned. Sections through the brain revealed a dense lymphocytic exudate over the cortical surface in the involved areas. Aggregations of plasma cells and areas of hemorrhage were noted in the cortex immediately underlying this exudate. The sections through the wall of the ventricular abscess showed dense masses of plasma and lymphocytic cells, a marked intimal hyperplasia and areas of necrosis with vaguely formed mycotic filaments. Sections through the lung abscess and the antecubital abscess wall failed to demonstrate any typical actinomyces.

COMMENT

The symptomatology of actinomycotic involvement of the central nervous system varies as to the type and extent of the pathologic process present. In an abscess the course may be long and associated with remarkable remissions; such a lesion may also mimic a neoplasm. In the meningitic form the outstanding characteristic is the comparative well being and excellent condition of the patient in contrast to the profound changes in the spinal fluid. The symptoms of a low grade meningitis are present, such as headache, vertigo and cervical rigidity. The patient is less toxic than in a tuberculous condition, and the spinal fluid changes differ. The latter condition is the most frequently confused, but here the spinal fluid is less purulent and the lymphocytes predominate in the differential count rather than the polymorphonuclear leukocytes; furthermore, the probability of isolating the specific bacillus is infinitely greater than finding the fungus.

Because of the indolent character of the lesion on the finger a fungous infection was suspected before the organisms were demonstrated in this primary focus and the antecubital abscess. The painless felon that did not improve after drainage could scarcely have been on the basis of a pyogenic infection.

An astonishing but typical feature of this case was the excellent physical and mental condition of the patient in the face of a spinal fluid tap, in which the purulent nature of the fluid almost prevented its removal through a large needle. This paradox was rendered even more bizarre by the apparent improvement from time to time with no variation in the cell count of the spinal fluid.

We were aware that many strains of this organism are apathogenic to animals and thus were not certain of producing the disease when it was injected into the rabbit. The failure to grow cultures from the spinal fluid, however, made us believe that the mycotic filaments do not stray far from the original focus in the fluid or lose their viability. It is interesting to note that organisms in the cerebral pus were of the branching, filamentous type, with only a vestige of clubbing, and resembled that grown on artificial mediums. The pus from the antecubital abscess and finger, however, exhibited the typical clubbed "sulfur" granules.

If the lesions on the extremity had healed before the cerebral symptoms preempted the clinical picture, one would have been prone to consider this a "primary" actinomycotic involvement of the central nervous system. That such a primary site exists is questioned by Zeitlin and Lichtenstein,[2] who in 1937 were able only by microscopic study to find an extracerebral primary lesion.

SUMMARY

The case of basilar actinomycotic meningitis here reported was diagnosed prior to death. The point of entrance, through the wound on the finger, is unusual, the primary focus in most cases being in the cranial bones or the respiratory system.

It is felt that diagnosis by means of demonstrating the organism in the spinal fluid is difficult, but in any case of purulent meningitis in which the patient is not acutely ill, Actinomyces may be suggestive as a causative factor.

2. Zeitlin, Howard, and Lichtenstein, B. W.: Actinomycotic Abscess of the Brain, Arch. Path. **23**: 58-66 (Jan.) 1937.

Special Article

NOISE AND ITS EFFECT ON HUMAN BEINGS

NOISE CONTROL AS A BY-PRODUCT OF AIR CONDITIONING

CAREY P. McCORD, M.D.
DETROIT
EDWIN E. TEAL, M.S.
ANN ARBOR, MICH.
AND
WILLIAM N. WITHERIDGE, M.S.
DETROIT

Air conditioning and noise prevention have a definite relationship in controlled human environments. Whenever the windows of buildings are kept closed to exclude noise, air conditioning may become a practical necessity. Conversely, it follows as a natural consequence that occupants of buildings living in artificial atmospheres and thus not dependent on open windows and doors will in some measure be protected against extraneous noises arising from traffic, nearby buildings or low flying aircraft. This beneficent by-product of air conditioning is considered of such importance by the Association's Committee on Air Conditioning that this report has been prepared to embody present concepts of noise in its relation to the comfort and health of human beings.

The multiple and insidious ill effects of noise constitute an inadequately recognized baneful influence on the lives of many million persons throughout the country, especially those who live in urban areas. In noisy industrial employments it is not unusual to find in those groups of workers below 30 years of age as many as 50 per cent with some degree of impaired hearing. This noise deafness constitutes the most serious and tangible of the ill noise effects (echeoses), but there is, in addition, a host of scarcely measurable injuries made evident by neuroses, loss of sleep, excessive fatigue, emotional disturbances and the like that jeopardize the complete well-being of most persons, and in which noise may well play a part.

DEFINITIONS

Before the effects of noise on human beings are discussed, a few of the more frequently used technical terms will be defined.

1. *Sound.*—In a physical sense, sound may be defined as a wave motion or vibration in an elastic material medium such as the atmosphere. Physiologically, sound is the sensation produced primarily by air-borne vibrations reaching the ear. The auditory nerve impulses which are perceived as sound originate in the cochlea, a specialized part of the inner ear. This organ is sensitive to displacements of the surrounding fluid (endolymph) which correspond to the variations in air pressure commonly termed "sound waves."[1] Bone

From the Department of Engineering Research, University of Michigan (Mr. Teal).
From the Bureau of Industrial Hygiene, Department of Health (Dr. McCord and Mr. Witheridge).

This is the fourth in a series of publications related to air conditioning which are being prepared by the American Medical Association's Committee on Air Conditioning. This committee has the following membership: Emery R. Hayhurst, Columbus, Ohio; William F. Petersen, Chicago; Horatio B. Williams, New York; Constantin P. Yaglou, Boston, and Carey P. McCord, Detroit, chairman.

1. (*a*) Winton and Bayliss: Human Physiology, ed. 2, Philadelphia, P. Blakiston's Son & Co., 1935. (*b*) Ballenger, W. L.: Diseases of the Nose, Throat and Ear, ed. 6, Philadelphia, Lea & Febiger, 1930.

conduction of sound vibrations also occurs to some degree and is made use of in certain types of "deaf aids." Bone conduction is particularly important when noise is simultaneously transmitted by sound waves through the air and by vibrations through the skeleton.

2. *Noise.*—Noise is sound which is generally considered unmusical, confused, discordant, irksome or disturbing. Physically, noise may be the result of either a single frequency or many component frequencies

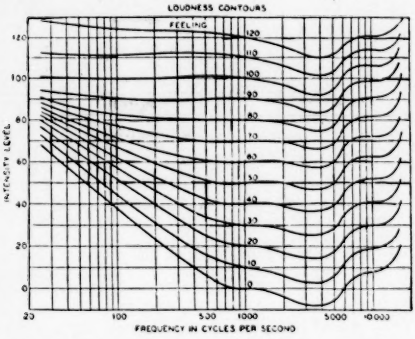

Fig. 1.—Relation between subjective loudness, sound intensity and sound frequency (Proposed Standards for Noise Measurement, as adopted June 26, 1933, by the A. S. A. Committee on Acoustical Measurements and Terminology, Journal of the Acoustical Society of America 5: 109 [Oct.] 1933.)

which bear no harmonic relation to one another. Harmonic sounds also may have the same unpleasant effect as noise if their intensities become too great. It should be borne in mind that the distinction between noise and music cannot be made on a strictly physical basis, since individuals differ widely in sensitivity, temperament and sound appreciation and therefore will not unanimously agree to an arbitrary differentiation between musical sounds and noise.

3. *Intensity and Loudness.*—Besides frequency or pitch (number of vibrations or cycles per second), sounds have two closely related attributes: intensity and loudness. That "intensity" and "loudness" are not synonymous is due to the fact that the ear is not uniformly sensitive throughout the entire range of audible frequencies. "Intensity" is a physical term used to denote the amount of sound energy passing through a unit area per unit of time. "Loudness," on the other hand, refers to the sensation evoked by a given sound intensity. Thus the loudness of a sound depends both on its intensity and on the physical characteristics of the ear. The ear is sensitive to a range of frequencies from 16 to 22,000 cycles per second [2] but is most sensitive between 1,000 and 5,000 cycles (fig. 1).

4. *Decibel Scale.*—Because of the enormous range of intensities experienced with audible sounds, a logarithmic scale is much more convenient than an arithmetic scale for the measurement or comparison of sound intensities. The unit of the logarithmic scale in general use is the "bel" and is defined thus: If the intensity of a sound increases ten times, its intensity level is said to have risen one bel; if a hundred times, two bels. Accordingly, the rise in bels is simply the common logarithm of the ratio of the two sound intensities. The "decibel," or one tenth of a bel, is a more convenient unit for sound intensity measurements and as a result is used in preference to the bel.

The smallest intensity of sound required to produce a sensation is said to be on the threshold of audibility, or threshold of hearing. This point is zero on the decibel scale (tables 1 and 2). When the intensity of sound is increased until it is felt as well as heard, it is said to be on the threshold of feeling. This point, known as the upper limit of audibility, is near 120 decibels for certain sound frequencies. At such a level, sound has an intensity of one trillion (1,000,000,000,000) times its threshold value. A change of five decibels is barely perceptible at very low noise levels, whereas a change of about 0.3 decibel is noticeable at noise levels of 80 decibels or higher.[3]

COMBINED SOUNDS

If one loud noise is present with several lesser noises, the total noise level in decibels usually is but little above that of the loudest noise. Consequently the amount of reduction that may be obtained in the total noise level will correspond closely to the reduction that can be made in the loudest component. If several noises arrive at one point with the same intensity, the combined noise level will be only a few decibels above that of any one component.

For example, two identical whistles sounded together do not make a noise twice as loud as one. Instead they make a combined sound three decibels louder than that of one whistle. Thus if each whistle produces a 75 decibel sound, the two together will give a sound of 78 decibels. It would take 100 identical whistles to make a noise 20 decibels louder than that of one whistle sounded alone (table 3).

MEASUREMENT OF NOISE

1. *Sound Level Meter.*—Accurate measurements of the intensity of sound are made with "sound level meters" in which acoustical oscillations are translated into electrical oscillations and then amplified by high quality vacuum tubes. Measurements which largely depend on the ear cannot be considered accurate and may lead to discrepancies which prevent direct comparison between the results of independent noise studies.

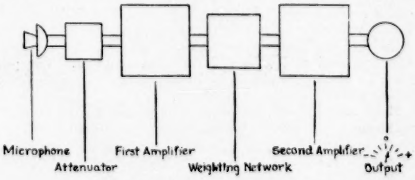

Fig. 2.—Diagram of sound level meter.

Figure 2 is a block diagram of the typical sound level meter. The "weighting network" of this meter is designed to simulate the ear's reduced sensitivity at the highest and lowest frequencies (fig. 1). Whenever it is desired to analyze the character of a sound, the weighting network is replaced by an analyzing circuit using filters which cut out all but certain bands of frequencies. The sound level meter then becomes an

2. Gildemeister, Martin: Investigations on the Limitations of Human Hearing, Berlin Letter, J. A. M. A. **80**: 1533 (May 26) 1923. Ballenger,[16] Kaye.[26]

3. Geiger, P. H.: How to Avoid Trouble from Noise in Air Conditioning Installations, Heating, Piping and Air Conditioning **8**: 601 (Nov.) 1936.

analyzer by which sounds of particular frequency may be identified from complex noises; this is especially valuable in determining the source of noises from machinery.

2. *Audiometer.*—Another instrument for the measurement of noise is the "audiometer," which may be used over almost the entire auditory spectrum either for measurement of hearing deficiency or for determining the masking effect of a noise. This instrument consists of a unit for generating, in a special earphone, a standard sound, which may be adjusted to any given level of sound intensity. To determine the masking effect of a noise, the intensity of the standard sound in the earphone is varied until it can just be heard in the presence of the outside noise. For hearing measurements, the signal from the audiometer is varied over the audible range of frequencies to determine the threshold of perception of the subject at several sound frequencies.

3. *Tuning Fork Method.*—A simple method of measuring the masking effect of noise sufficiently accurate for some types of field work employs only three tuning forks producing different sound frequencies (usually 128, 512 and 2,048 cycles per second) and a stop watch.[4] The observer, in the presence of the noise to be measured, strikes one of the tuning forks a "standard" blow. At the same instant he starts the stop watch. The fork is then held near the ear and moved back and forth slightly until its tone is completely masked by the noise, at which time the watch is stopped. The average time for several tests is subtracted from the time during which that particular tuning fork remains audible in a quiet place. This difference is then translated mathematically into decibels. Similar measurements are made with the other two tuning forks in order to determine the approximate frequency distribution of the noise, as well as the intensity at each frequency.

TABLE 1.—*Relation of Certain Sounds to the Threshold of Hearing* *

Average Decibels	Source or Description of Sound
130	Threshold of painful sounds; limit of ear's endurance
120	Threshold of feeling (varies with frequency)
115	Airplane motor (1,600 revolutions per minute) 18 feet from propeller
110	Steel plate hammered by four men, 2 feet
105	Express train passing at high speed
100	Loud automobile horn, 23 feet
90	Pneumatic drill, 10 feet
85	Very heavy street traffic along elevated line
80	Street car crossing tracks
80	Police whistle, 15 feet
80	Very loud radio music in the home
75	Heavy street traffic
75	Snow scraping and shoveling, 15 feet
70	Interior of street car
70	Loud peal of thunder (1 to 3 miles)
65	Usual loudness of radio music in the home
60	Ordinary conversation, 3 feet
55	Speech in a small auditorium
50	Conversational voice, 12 feet
45	Speech in a large auditorium
45	Near outlet of ventilating duct in high school auditorium ("very noisy")
40	Center of New York, quietest time of night
35	Loud fan noise in theater
35	Soft radio music in the home
30	Ticking of watch, 3 feet
30	Quiet street; no traffic
20	Whisper, 4 feet
15	Quiet fan noise in theater
10	Rustle of leaves in gentle breeze
8	Near outlet of ventilating duct in talking picture studio (Planned control of noise)
0	Threshold of hearing; faintest audible sound

* Adapted from similar tables (City Noise: Report of the Commission Appointed to Study Noise in New York City, Noise Abatement Commission, Department of Health, New York, 1930. Churcher, B. G.; King, A. J., and Davies, H.: The Measurement of Noise, with Special Reference to Engineering Noise Problems, J. Inst. Elect. Engineers **75**: 401 [Oct.] 1934. Winton and Bayliss.[18] Kaye.[38] Geiger.[3] American Society of Heating and Ventilating Engineers Guide for 1936).

4. American Society of Heating and Ventilating Engineers Guide for 1936.

EFFECTS OF NOISE

There is both practical and experimental evidence that noise has been responsible for impaired hearing, fatigue, neuroses, increased blood pressure, and decreased working and mental efficiencies. Experience indicates that a noise level of 90 decibels or higher is definitely harmful to the human ear.[5] Exposure to prolonged noises of lower level, which is the case with many occupational noises, is also harmful, but the extent of harm done is not well known and cannot be fairly estimated at this time.

1. *Animal Experiments.*—Blake[6] states that experiments on animals show very definitely that high-pitched sounds of various kinds and low-pitched sounds under certain conditions of resonance produce degenerative changes in the organ of Corti, "beginning in the nucleated ciliated cells, progressing to the neuron and then, secondarily, attacking the vibrating mechanism and extending to the contiguous membranous labyrinth." A few experiments with animals have shown a tendency for hearing to be impaired more by vibrations transmitted through the bony structure of the body to the ear than by air-borne vibrations coming through the external ear.

Popoff[7] placed white mice in a factory where hot steel bars were hammered into scythes. The principal sound frequencies present were from 60 to 100 cycles and from 2,000 to 3,000 cycles per second. One group of ten mice was placed in a cage in contact with the floor, while another group was placed in a cage suspended from the ceiling by means of a spring. The two groups of mice were exposed to the same sound

TABLE 2.—*Decibel Scale Compared with Subjective Loudness Scales*

	Objective (Stimulus Intensity)		Subjective (Sensation Produced)	
Identification	1 Decibels—Logarithmic Scale of Intensity*	2 Arithmetic Scale of Relative Intensity	3 American Standards Association Proposed Loudness Scale†	4 Relative Loudness Scale of Churcher, King and Davies‡
Threshold of feeling (aural)	120	$10^{12} = 1{,}000{,}000{,}000{,}000$	560,000	
	110		220,000	64,000§
	100		88,000	40,000
Pneumatic drill, 10 feet	90	$10^{9} = 1{,}000{,}000{,}000$	38,000	26,000
	80		17,000	16,000
	70		8,000	8,800
Ordinary conversation, 3 feet	60	$10^{6} = 1{,}000{,}000$	4,400	4,400
	50		2,200	2,200
	40		1,000	1,000
Tick of watch, 3 feet	30	$10^{3} = 1{,}000$	300	400
	20	100	100	120
	10	10	14	
Threshold of hearing	0	$10^{0} = 1$	1	

* At 1,000 cycles per second.
† Proposed standards for noise measurement, as adopted June 26, 1933, by the American Standards Association Committee on Acoustical Measurements and Terminology, J. Acoust. Soc. America **5**: 109 (Oct.) 1933. Geiger.[3]
‡ Churcher, King and Davies (reference given in table 1).
§ The figures in this column represent original units multiplied by 400 to facilitate comparison with column 3.

5. McKenzie, Dan: Noise and Public Health, J. State Med. **42**: 542 (Sept.) 1934.
6. In Kober, G. M., and Hayhurst, E. R.: Industrial Health, Philadelphia, P. Blakiston's Son & Co., 1924.
7. Popoff, N. F.: On the Changes in the Auditory Apparatus of White Mice Caused by Noises in the Metal Trades: Preliminary Report from the All-Russian Congress of Otolaryngologists held at Moscow in 1927, J. Indust. Hyg., Abstr. **13**: 17 (Jan.) 1931.

vibrations for eight hours each day. In twenty days an examination of one of the mice from the cage on the floor showed destructive changes at the commencement of the basilar membrane. The corresponding sections of the organ of Corti were destroyed and changes were noted in the neighboring ganglion cells. In three months the destruction was observed in another mouse to have extended to higher windings of the cochlea. There was destruction of the ganglion cells with their afferent and efferent fibers inside the lamina spiralis and corresponding portion of the modiolus. In eight months, ganglion cells and nerve fibers of the upper convolutions had disappeared. At the same intervals, mice from the suspended cage were observed to have suffered no changes in their auditory apparatus.

Wittmaack [8] subjected six guinea pigs to the continuous ringing of an electric bell suspended in their cage; dissection at five, ten, twenty, thirty, forty and sixty days showed no damage to the auditory apparatus. When the vibrations were transmitted through the tin floor of the cage, the animals became emaciated rapidly and two died after fourteen days. The others were killed and characteristic degeneration was found in the cochlea.

TABLE 3.—*The Change in Decibels Corresponding to Multiple Increases in Sound Intensity*

If sound intensity is multiplied by:	The change in decibels is:
2	3.0
3	4.8
4	6.0
5	7.0
6	7.8
7	8.5
8	9.0
10	10.0
20	13.0
50	17.0
100	20.0
1,000	30.0

Although these experiments tend to indicate that bone conduction is the more active cause of ear degeneration, the work of other investigators indicates that air conduction likewise is responsible for deafness and deterioration of the auditory apparatus. Yoshii,[9] repeating Wittmaack's experiments with guinea pigs, was able to demonstrate the presence of lesions after exposure of the animals to purely air-conducted sounds. Von Eichen [8] plugged the left ear of an animal and subjected it to a whistle tone C5.[10] On examination, he found that only the right labyrinth was affected. Grunenberg [8] exposed the right ear of a pigeon for about fourteen days to continuous tones of whistles A3 and A4 [11] and found that damage occurred only in the right cochlea. Hoessli [6] placed animals in a suspended section of an iron water pipe which was struck continuously by an automatic hammer to create sounds similar to those produced in boilermaking. He found that when one ear was closed a degenerative process occurred only in the other ear and that when both ears were closed there was apparently no damage done to either ear. Hoessli [9] also conducted experiments with animals insulated, as far as bone conduction was concerned, by a matting of felt placed on the floor of the cage, as suggested by Wittmaack, but found that this had no effect in preventing the onset of the disease process.

8. Cited by Pedley, F. G.: The Incidence of Occupational Deafness and Methods for Its Prevention, Safety Engineering **60**: 237 (Oct.) 1930.
9. Cited by Rodger.[15]
10. 1,024 cycles per second on the scientific musical scale.
11. 427 and 853 cycles, respectively.

Boulin [12] reported that mice subjected to noise did not thrive as well as those kept in a quiet place.

With the cathode ray oscillograph, Wever and Bray have studied electrical changes in the auditory nerves of anesthetized animals in response to sound. "When exposed to tones sufficiently loud to make them deaf to the tones, dogs were found to lose the electrical cochlear response to the tones. The electrical response for high tones is more readily picked up from the base of the cochlea than it is from the apex, while the reverse is true for low tones." [13]

Davis [14] subjected cats and guinea pigs to tones of from 600 to 2,500 cycles per second varying in intensity from 65 to 106 decibels. Four animals exposed to a 600 cycle tone at 95 decibels for seventy days showed a maximum loss of sensitivity of 20 decibels. Three guinea pigs exposed to a 2,400 cycle tone at 97 decibels for 40 days and four exposed to a 2,500 cycle tone at 106 decibels for forty-five days all showed loss of sensitivity electrically and degeneration of the organ of Corti histologically. The loss of sensitivity in this group varied from 20 to 76 decibels.

Microscopic examination of animals subjected to definite sound frequencies has shown that the section of the cochlea most seriously affected is that which is believed to be resonant to the test frequency:

> In guinea pigs and other small mammals subjected to such stimulation, injury to the apical turn of the cochlea in response to low tone stimuli, and basal disorganization for high tones has been demonstrated histologically. More recently despite the very considerable histological difficulties which arise when dealing with human material, lesions in the basal turn have been demonstrated in boilermakers and others, whose working conditions are such that they are subjected to loud noises of high frequency for some years. Such men become deaf to high tones; by correlating the range of frequencies over which the patient was deaf with the position of the cochlear injury, examined histologically after death, those regions of the human basilar membrane which are resonant to frequencies from 2,000 cycles per second upwards have been roughly located.[15a]

2. Human Hearing Impairment.—Audiometer experiments on human beings indicate that workmen exposed to particular frequencies after a time become deaf to those frequencies, and in many cases deficiency appears first in the high frequency range. The lower part of the organ of Corti, which is the area concerned with the perception of the higher frequencies of sound,[15b] appears to be especially vulnerable, either because of the small amount of blood supply to that area (Habermann) or because it is the most delicate and highly developed part of the organ (Rodger).[15]

The study of industrial noises is of comparatively recent date, and the increasing interest is accounted for partly by the increase in industrial noises and partly by a better realization of their harmful effects and of the waste of energy which they produce.

Auditory diseases arising from occupation generally are due to a chronic degeneration of the cochlea. They are serious in proportion to the length of time employees have worked at noisy occupations.[16] Occupational

12. Boulin, P.: Noise and Its Influence from the Viewpoints of Inconvenience, Health and the Productive Capacity of Workers, J. Indust. Hyg., Abstr. **13**: 217 (Oct.) 1931.
13. Recent Research on Hearing, editorial, J. A. M. A. **110**: 900 (March 19) 1938.
14. Davis, Hallowell; Derbyshire, A. J.; Kemp, E. H.; Lurie, M. H., and Upton, Morgan: Experimental Stimulation Deafness, Science **81**: 101 (Jan. 25) 1935.
15. Rodger, T. R.: Noise-Deafness: A Review of Recent experimental Work and a Clinical Investigation into the Effect of Loud Noise upon the Labyrinth in Boiler-Makers, J. Laryng., Rhin. & Otol. **30**: 91 (March) 1915.
16. Occupation and Health, vol. II, International Labor Office, Geneva, Switzerland, 1934.

deafness usually develops in the worker gradually, but in many cases of exposure to intense high frequencies the accrued damage is permanent.

Gottstein and Kayser found that of seventy-five smiths and machinists 40 per cent were definitely hard of hearing and only 39 per cent had normal hearing. Holt found only 10 per cent of forty coppersmiths with normal hearing. Barr reported normal hearing in only 9 per cent of 100 boilermakers; Habermann found that of thirty-one boilermakers none had normal hearing.[17]

In a survey reported by the New York Department of Labor[18] 1,040 workers in many different noisy industries were tested for deafness and, as might be expected, the highest incidence of deafness for any age group was found in the noisiest industries; that is, where the noise level was between 60 and 80 decibels. Of those workers who were exposed to noise for twenty-five years or more and who did not have a history of disease which might have been a causative factor 26.9 per cent were deaf in some form, while in the group exposed to noise for less than one year only 6 per cent appeared to have any impairment of hearing. Of the 246 persons found deaf, ninety-one had histories of infectious ear involvement and the deafness of 155 was traceable to industrial causes.

McKelvie[19] found a 24.3 per cent occurrence of deafness among 1,011 weavers examined, of which 6.7 per cent was nerve deafness. However, no case of nerve deafness, which is the type due to long exposure to noise, was found in weavers employed less than ten years. The number of cases increased with the years of employment, and this was especially evident among those who had worked twenty years or more.

It has been observed that many locomotive crewmen are partially deaf, and if this deafness has progressed too far they are apt to be turned down after years of continuous work when they come up for annual examination.[20] Thompson[21] has stated that 45 per cent of these workers have impaired hearing. Glibert[8] noted that 5.8 per cent are affected within five years, and after twenty years 52.1 per cent have defective hearing. Peyser[20] believed that most of this deafness among locomotive workers is due to bone conducted vibrations. McCord[22] reported a 52 per cent incidence of occupational deafness in train dispatchers, and this occurs largely in the telephone ear—the left.

Very loud, sudden noises, explosions or excessive pressure changes are dangerous, particularly to the tympanic membrane or the bony structure of the middle ear. In a trade such as drop forging where large pressure changes occur, it is found that many workmen acquire a thickening of the eardrum which prevents airborne sounds from passing readily to the inner ear. So regularly are drop forge operators partially deaf that this impairment in some instances is regarded as their proof of occupational experience. Unless hearing is damaged, applicants claiming experience may not be employed.

Seventy-five soldiers who handled and fired antiaircraft guns were examined before firing was begun and reexamined one week after completion of the firing tests, which occupied a period of about two months. Vadala[23] concluded from these tests that "the long continued and oft repeated tubotympanic congestion resulting from gunfire has a gradual diminishing effect on the acuteness of hearing by causing a chronic catarrhal condition of the tympanum with loss of elasticity of the drum, and fibrous adhesions."

Noisy work performed in a confined space is more harmful to the ears than if done in the open air. Hammering inside a boiler or firing in an enclosed rifle range is especially dangerous since resonance, reflection and reverberation accentuate the noise. On this account, work in much used vehicular or railway tunnels or subways is conducive to loss of hearing.

It is pointed out in the New York report on "City Noise" that policemen and taxi drivers are very often affected with deafness because of their continuous work in traffic. One British physician has expressed the belief that the opening of a new street carrying heavy traffic through a certain formerly quiet suburb caused the number of illnesses in that community to increase.

It has been observed that dizziness sometimes is a result of exposure to excessive noise or vibration.[24] Sounds that are of such pitch or intensity as to cause a tingling sensation or pain in the ear will probably cause permanent damage if exposure is continued over a long period.

High-pitched tones appear to be more dangerous than tones of low pitch from evidence both in human experience and in animal experimentation. The din in boiler works is considered by some investigators to be more injurious than the roaring in cotton spinning mills; the report of small caliber artillery and machine guns is likewise more injurious than the boom of heavy guns, unless the latter actually ruptures the tympanic membrane.

3. *Effect of Noise on Working Efficiency.*—Most of the investigative work on noise has been concerned with the physiologic effects of a noisy environment on nonauditory performance. This is practically justifiable since relatively few tasks of daily life have a direct, and fewer still an exhaustive, auditory basis. Just how much and in what manner the initial effects of a noise stimulus on nonauditory performance differ from the final or chronic effects is a problem offering extensive opportunity for research.

Weston and Adams[25] observed that weavers using ear defenders in alternate weeks over a period of twenty-six weeks had an increased output of about 1 per cent when the defenders were worn. In this case the effect of ear defenders was to reduce the loom noise from 96 to 87 decibels. Their experiments prompted the conclusion that, "even after years of work in a noisy environment, the worker does not become completely adapted or acclimated to noise but goes through the process of adaptation daily." In a later series of experiments they[26] found that the output of weavers was increased about 3 per cent by an apparent decrease in noise level of 15 decibels (from 96 to 81) when ear

17. Smyth, H. F.: Noise in Industry: Its Effect on the Hearing and on General Health, Ann. Otol., Rhin. & Laryng. **41**: 1108 (Dec.) 1932. Thompson.[21]

18. Effect of Noise on Hearing of Industrial Workers, New York State Dept. of Labor, Spec. Bull. 166, 1930.

19. McKelvie, W. B.: Weaver's Deafness, J. Laryng., Rhin. & Otol. **48**: 607 (Sept.) 1933.

20. Swann, C. C.: The Effect of Noise on Hearing, International J. Med. & Surg. **46**: 314 (July) 1933.

21. Thompson, W. G.: The Occupational Diseases, New York, D. Appleton & Co., 1914.

22. McCord, C. P.: The Heart Problem of the Worker, Assn. of Life Ins. Medical Directors of America, 1931.

23. Vadala, A. J.: Effects of Gun Explosions on the Ear and Hearing Mechanisms, Mil. Surgeon **66**: 810 (June) 1930.

24. Effect of Noises on the Hearing of Workmen, U. S. Monthly Labor Review **20**: 1133 (May) 1925. Rodger.[10]

25. Two Studies in the Psychological Effects of Noise:

I. Pollock, K. G., and Barlett, F. C.: Psychological Experiments on the Effects of Noise.

II. Weston, H. C., and Adams, S.: The Effects of Noise on the Performance of Weavers, Brit. M. Research Council, Indust. Health Research Board, Report 65, His Majesty's Stationery Office, London, 1932; abstr. J. Indust. Hyg. **15**: 18 (March) 1933.

26. Weston, H. C., and Adams, S.: The Performance of Weavers Under Varying Conditions of Noise, Brit. M. Research Council, Indust. Health Research Board, Report 70, His Majesty's Stationery Office, London, 1935.

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defenders were used. In terms of personal efficiency, this was equivalent to an increase of about 7.5 per cent with subdued noise. It was stated that the change from 96 to 81 decibels probably represented about a 50 per cent reduction in apparent loudness.

Table 4 gives the effect on the sensation of loudness by reducing sound intensity 10 decibels at different positions on the decibel scale. Although the results of independent investigations do not agree in every instance, it is apparent that the initial sound intensity as well as the change in intensity must be considered when estimating the effect of such a change on the sensation of loudness.

Obata [28] ran tests on children and adults for their efficiency in addition and in marking out certain Japanese letters (syllables) in a confused jumble of 1,600 letters under the influence of various types of noise and music. In nearly every case, working speed rather than accuracy was reduced. Soft recorded music appeared to have a more distracting effect on the subjects than did ordinary low level noise. However, if

TABLE 4.—*Effect of Reducing Sound Intensity Ten Units at Different Positions on the Decibel Scale*

Sound intensity in Decibels		Per Cent Reduction in Sensation of Loudness *		
Initial	Final	A. S. A.[8]	Geiger [27]	Churcher †
100	90	57		35
90	80	55		38
80	70	53	46	45
70	60	45	50‡	50
60	50	50	56‡	50
50	40	55	64‡	55
40	30	64	74‡	60
30	20	72	87	70
20	10	86		

* Computed from graphs published by the authorities indicated.
† Reference given in table 1.
‡ Interpolated.

the test period was long enough to produce fatigue, the subjects apparently obtained some relief from music, whereas noise enhanced the fatigue with consequent adverse effect on efficiency.

Pollock and Bartlett [25] found that discontinuous loud mechanical noise was more disturbing than continuous noise of the same type; disturbance was not simply a function of loudness, for "soft" phonograph recordings proved almost as distracting, especially if the subject matter reproduced was "interesting." These investigators concluded that "noise in general tends to produce slight and readily recoverable diminution of efficiency."

In a German factory where experienced workers assembled temperature regulators, sixty imperfections were found in a group of eighty regulators. The assembly room was next to a boiler shop. When this work was performed in a quiet place, 110 units were assembled in the same time previously required for eighty units and only seven imperfections were found. In a packing room equipped with a noisy ventilating fan, output was increased 12 per cent when the fan was turned off, in spite of the poorer ventilation which existed during that period.[29]

Berry quotes some results furnished by Griswold on the efficiency of piece work employees in the Hartford office of the Aetna Life Insurance Company.[30] Data for this study were gathered before and after the offices were quieted. The noise level was reduced 14.5 per cent and the average efficiency of workers was increased 8.8 per cent. Errors of typists were reduced 29 per cent, while those of machine operators were reduced 52 per cent. Employee turnover decreased 47 per cent and absenteeism dropped 37.5 per cent.

Dennis,[31] reporting the results of the 1930 New York noise survey, gives the following information: A 12 per cent increase in output of office workers followed a reduction of the noise level from 45 to 35 decibels. A 42 per cent reduction in errors in the telephone room of a telegraph company, with a 3 per cent drop in cost, was effected by a reduction of the noise level from 50 to 35 decibels. Boulin [12] states that a reduction from 55 to 43 decibels was beneficial to typists but that further reduction showed no advantage. Laird [32] reported in the results of a metabolism experiment at Colgate University that 19 per cent less energy was consumed by typists after noise of about 50 decibels in the experimental room was reduced to 40 decibels (from 50 to 60 per cent reduction in loudness) by the addition of sound absorbing wall panels. Letters were typed 4.3 per cent faster during the "quieted phase" of the experiment. Laird also has found that accuracy in immediate memory for nonsense syllables was increased 15 per cent, and delayed memory increased 8 per cent by reducing a complex noise from 50 to 40 decibels.[31]

Luckiesh,[33] in an experiment with nine subjects performing a standard visual test under constant illumination, first in a quiet and subsequently in a noisy room, has found that noise increases the time required for the performance of the test by approximately 6 per cent and suggests that an even greater effect might be observed if the experiment was conducted in a factory where the noises were of a nonrhythmic character. As early as 1893, Wundt [34] showed that reaction times may be retarded by noise, both with auditory and with visual signals.

4. *Effect of Noise on Intracranial Pressure.*—In 1930 Kennedy conducted investigations at Bellevue Hospital in New York to determine the effect of noise on intracranial pressure. Using as his subjects persons who had previously had sections of their skull removed in the treatment of tumors or injuries but were otherwise normal, he was able to produce graphic records of the increased brain pressure occasioned by certain noises. The recording device consisted of a drum containing a partial vacuum placed over the soft or thin section of the skull. A sensitive mechanism transmitted the pressure variations within the cranium to a carbon black recording cylinder. "A sharp loud report produced notable irregular disturbance and a rise in intracranial pressure to four times normal. A second noise caused a second peak in the curve." [35] The sudden noises used in these experiments caused increased pulse rates, increased blood pressure and irregularities in heart rhythm. Landis has shown that the noise of a firecracker produced an increase in the systolic blood pressure of 20 mm. in twenty seconds.[31]

27. Geiger, P. H., and Firestone, F. A.: The Estimation of Fractional Loudness, J. Acoust. Soc. America **5**: 25 (July) 1933.
28. Obata and others: Effects of Noise upon Human Efficiency, J. Acoust. Soc. America **5**: 255 (April) 1934.
29. Increased Production Resulting from Lessening of Noise, U. S. Monthly Labor Rev. **27**: 249 (Aug.) 1928.
30. Griswold, P. B.: Bankers' Service Bulletin, June 1931, cited by Berry, F. E.: Cost of Noise, Mechanical Engineering **57**: 732 (Nov.) 1935.
31. Dennis, E. B.: Noise—Its Measurement, Effect and Control, New York State J. Med. **30**: 573 (May 15) 1930.
32. Laird, D. A.: The Measurement of the Effects of Noise on Working Efficiency, J. Indust. Hyg. **9**: 431 (Oct.) 1927.
33. Luckiesh, M.: Visual Efficiency in Quiet and Noisy Workplaces, Elec. World, part 1, **98**: 472 (Sept. 12) 1931.
34. Wundt, W.: Physiologische Psychologie, vol. II, chapter VI, 1893 (quoted by Pollock and Bartlett [25]).
35. Kennedy, Foster: Fatigue and Noise in Industry, New York State J. Med. **36**: 1927 (Dec. 15) 1936.

5. *Effect of Noise on Digestion.*—That noise may seriously affect the normal digestive functions and thus assume a causative role in so-called nervous indigestion is indicated by several lines of evidence. Observations on human beings by Smith and Laird [36] at Colgate University showed that a noise of 60 decibels or above inhibited the normal peristaltic activity of the stomach. A noise of from 80 to 90 decibels caused a decrease of 37 per cent in the number of stomach contractions per minute. Laird [37] found that a noise intensity of 60 decibels or more cut down the secretion of saliva by about 44 per cent and reduced the flow of gastric juices; however, a noise level of 40 decibels reduced the saliva flow only 17 per cent and had no effect on the flow of gastric juices.

6. *Fatigue Due to Noise.*—If work must be done in the presence of a distracting noise, one's nervous system probably makes a continuous effort to adapt itself to that disturbance. A more intense mental application is required to focus attention on certain types of work, and eventually nervous or mental fatigue may occur.

The intensity and pitch of noise most likely to produce nervous fatigue is difficult to determine because of individual differences. Even for one individual the limits vary from day to day because sensitivity to noise depends, among other things, on health, muscular fatigue and mental attitude. It has been observed that noise of 50 or more decibels is generally annoying and productive of irritability. Sounds are more apt to be fatiguing if their frequencies are either above or below the range of frequencies normally used for speech.[38] The frequencies of most speech sounds lie between 200 and 6,000 cycles. It appears that pitch or frequency of sound is as important as intensity of sound as a factor in producing mental fatigue.[39] In fact, from the results of experiments at Colgate University on the "annoyance effect" of noise it has been suggested that "a noise of low frequency and high intensity may be less annoying than a high frequency noise of low intensity." [40]

Long continued exposure to annoying or fatiguing sounds may soon lead to a neurasthenic or psychasthenic state. The nervous system has been found to be of a rhythmic nature and as a result it responds more readily to rhythmic than to irregular stimuli. Even though adaptation to a regular or rhythmic sound is possible to the extent that one becomes unaware of that sound, nervous energy is expended in such a process, and it may be expected that long exposure will gradually bring on fatigue. Continuous exposure to irritating noises may lower one's threshold of feeling and thus produce hypersensitivity to noise.

Relaxation in quiet surroundings after working hours may be an important means of preventing chronic ear diseases and fatigue due to noise. As pointed out by the New York Noise Abatement Commission in its report entitled "City Noise," sleepless nights are many times the result of unnecessary or thoughtlessly produced noises. Archambault,[41] commenting on the treatment of insomnia in persons obliged to dwell in congested tenement districts, makes the following statement: ". . . I do not hesitate to prescribe [for these patients] some of the milder sedatives and hypnotics in order to facilitate or procure sleep, being morally convinced that the judicious use of such medication . . . is infinitely less detrimental than the persistent insomnia which exhausts both physical energy and moral stamina. . . ." McKenzie states that "while noise does not induce organic disease, apart from deafness, it does induce a condition of functional weakness or disability, which is manifested in exhaustion more or less severe according to (1) the kind of noise, (2) the normal mental and constitutional makeup of the recipient and (3) the state of health at the time of his exposure. And this state of fatigue, though itself not a disease, opens the door to disease." [42]

PREVENTION OF NOISE

Since the ear does not have an external protector similar to the lid that guards the eye against disagreeable stimuli, it is desirable to reduce or eliminate unpleasant and harmful noises through whatever means may prove possible. When air conditioning appliances lead to the closure of windows and doors and at times introduce double windows and doors, extraneous noises may be reduced from 5 to 30 decibels with an average near 10. Depending on the loudness of extraneous noises, these barriers may operate to protect the occupants of air conditioned spaces against as much as 75 per cent of noise, but more often in the general range from 45 to 55 per cent.

In view of the array of evidence earlier presented in this paper tending to establish the harmful effects of noise, it at once becomes apparent that air conditioning, apart from any values related to the quality of the air in occupied areas, serves a helpful purpose through interposing barriers against noises of outside origin. The statements just made fulfil the chief purpose of this publication. However, since the scope of this paper embraces a general discussion of noise, casual comment is now made on other aspects of the elimination and avoidance of noise.

In addition to the functions served by air conditioning as a noise abater, the eradication or reduction of noise may be accomplished through measures falling into three general categories: (1) elimination of noise at its source, (2) reduction of noise by altering the surroundings and (3) personal protection against noise.

1. *Elimination of Noise at Its Source.*—Much noise is unnecessarily produced by the needless sounding of automobile horns, the operation of loud radios, the harboring of noisy animals, and so on. Manifestly, this type of noise can be eliminated only through regulatory and educative procedures. Referring now to noises of more nearly pardonable character, such as those in industry, it is maintained that elimination at the source is the most satisfactory method, although it may be expensive and difficult, requiring special initial experimentation and innovation. However, over a period of several years, the cost of this method may be less than either of the other two procedures. The noise in machinery is often the result of faulty design and worn parts; redesign or repair of such equipment may result in greater life, less loss of power and consequently lower operating cost. Silent operation may be accomplished by the use of well balanced parts to

36. Smith, E. L., and Laird, D. A.: The Loudness of Auditory Stimuli Which Affect Stomach Contractions in Healthy Human Beings, J. Acoust. Soc. America **2**: 94 (July) 1930.

37. Laird, D. A.: Experiments on the Influence of Noise upon Digestion, and the Counteracting Effects of Various Food Agencies, M. J. & Rec. **135**: 461 (May 18) 1932.

38. Kaye, G. W. C.: Noise and Its Measurement, Nature **128**: 253 (Aug. 15) 1931. Dennis.[31]

39. Spooner, H. J.: Health Problems Involved in Noise and Fatigue, Nation's Health **4**: 91 (Feb.), 156 (March) 1922. Thompson.[25]

40. Laird, D. A., and Coye, K.: Psychological Measurements of Annoyance as Related to Pitch and Loudness, J. Acoust. Soc. America **1**: 158 (Oct.) 1929.

41. Archambault, LaSalle: The Effect of Noise on the Nervous System, New York State J. Med. **32**: 1110 (Oct. 1) 1932.

42. McKenzie, Dan: Noise and Health, Brit. M. J. **2**: 636 (Oct. 6) 1934.

reduce the tendency to vibration, by keeping the machinery well lubricated, by isolation of machinery in sound proof rooms, and by the use of flexible cushioning supports.

As an example, to avoid the noise and vibration of a pneumatic riveter, pressure riveting may be substituted for impact riveting; the automobile industry has successfully applied pressure riveting to the assembly of certain units of steel bodies and frames. Another solution is the use of welding in place of riveting, and at the present time the steel skeletons of many buildings and other structures are welded instead of riveted.

2. *Reduction of Noise by Altering the Surroundings.*—Distinct from the noise lessening effects of air conditioning, noise entering occupied areas from extraneous sources may in some measure be controlled through the use of sound absorptive material in or on walls, ceilings and floors. Ordinarily the reduction of the noise level by these measures is on the order of 5 to 10 decibels, which, depending on the character of the noise otherwise present, may mean a reduction in the general range of from 30 to 50 per cent. Radio broadcasting studios have found it possible and practical to eliminate as much as 80 per cent of both interior and exterior noise. Many modern offices are made noisy by the use of endless typewriting, duplicating, accounting and addressing machines, along with the general din of conversation. The elimination of such noise should be controlled at the source through the use of "silent" or noiseless office equipment. That which cannot be so eliminated may be minimized through proper architectural devices.[43]

3. *Personal Protection Against Noise.*—Many writers have described methods of personal protection against noise and vibration, as, for example, the use of wax, petroleum impregnated cotton, or soft rubber ear defenders against air-conducted noise, and the wearing of soft soled shoes for protection against floor or ground vibrations which might be transmitted through the bony structure of the body. Protection further may be promoted by the use of straw, felt or rubber mats, and special chairs or platforms mounted on springs. In hammering operations, the use of benches with springs for supporting the work does much to reduce the vibrations experienced by the workman at each blow. Faithful wearing of ear plugs undoubtedly serves some purpose in protecting against air-borne vibrations, but in some instances aural dermatitis may be produced by these appliances. Naturally, such devices serve no useful purpose in protecting against bone-conducted vibration by which there is some proof that greater damage may be produced.

COMMENT AND SUMMARY

This committee recognizes that proper air conditioning is one factor tending to diminish the ill effects of noise of some types. The procurement of closed windows, doors and other sound barriers commonly associated with artificial climates in public buildings, office buildings, department stores, theaters and so on may eliminate as much as 75 per cent of the noises of extraneous origin.

In industry, air conditioning offers little promise of protection against noise for workers employed near the origin of noise. Vibration in ranges below audibility has a prominent role in the production of injuries arbitrarily classed as noise diseases. Although inaudible vibrations may involve occupied areas that may be air conditioned, obviously no protection can be secured from such vibrations by air conditioning.

The compilation of material making up this report presents extensive evidence that genuine injury is widespread as a result of noise action and that noise deafness is the chief of these dysfunctions in terms of both frequency and severity.

43. Bagenal, H., and Barnett, P. W.: The Reduction of Noise in Buildings; Recommendations to Architects, British Department of Scientific and Industrial Research, Building Research Bull. 14, London, His Majesty's Stationery Office, 1933.

Council on Foods

ACCEPTED FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COUNCIL ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION AND WILL BE LISTED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED.

FRANKLIN C. BING, Secretary.

GLORY WHEAT BREAKFAST CEREAL

Manufacturer.—The Teichgraeber Milling Company, Gypsum, Kan.

Description.—Wheat cereal product containing the embryo and a considerable amount of the bran.

Manufacture.—Selected winter wheat is cleaned, scoured, tempered with 3 per cent of water for twelve hours and milled. The breakfast cereal is obtained by selection of the most uniform granulation "germ middlings." Care is used to keep the product uniform in bran particles. The cereal is heat treated for fifteen minutes at 77 C. to destroy insect infestation, screened and automatically packaged and weighed.

Analysis (submitted by manufacturer).—Moisture 10.8%, total solids 89.2%, ash 1.4%, fat (ether extract) 2.3%, protein (N × 5.7) 14.0%, crude fiber 1.2%, carbohydrates other than crude fiber (by difference) 70.3%.

Calories.—3.58 per gram; 102 per ounce.

MORNING DEW BRAND CORN MEAL MUSH

Manufacturer.—Streator Canning Company, Streator, Ill.

Description.—Canned mush made from whole kernel yellow corn, degerminated yellow corn meal, salt and water.

Manufacture.—The ground yellow corn, degerminated yellow corn meal, water and salt are mixed and heated to 82 C. by live steam. The mush is mechanically filled into cans, which are sealed and processed at 121 C. for eighty-two minutes.

Analysis (submitted by manufacturer).—Moisture 83.6%, total solids 16.3%, ash 0.7%, fat (ether extract) 0.1%, protein (N × 6.24) 1.8%, crude fiber 0.4%, carbohydrates other than crude fiber (by difference) 13.4%.

Calories.—0.62 per gram; 18 per ounce.

(1) DOVE BRAND EVAPORATED MILK
(2) GEHL'S BRAND EVAPORATED MILK
(3) PURITY BRAND EVAPORATED MILK

Manufacturer.—Badger Milk Products Company, Milwaukee; also known as Gehl's Guernsey Farms, Inc.

Description.—Unsweetened, sterilized evaporated milk.

Manufacture.—Milk from company and government inspected farms is tested, preheated, evaporated under vacuum, homogenized, cooled, standardized to meet government requirements for butter-fat and total solids, filled into cans, sealed and sterilized.

Analysis (submitted by manufacturer).—Moisture 74.3%, total solids 25.7%, ash 1.7%, fat (ether extract) 7.8%, protein (N × 6.38) 6.6%, lactose (by difference) 9.6%.

Calories.—1.4 per gram; 40 per ounce.

THE SAN FRANCISCO SESSION

AMERICAN MEDICAL ASSOCIATION, EIGHTY-NINTH ANNUAL SESSION
SAN FRANCISCO, CALIF., JUNE 13-17, 1938

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The eighty-ninth annual session of the American Medical Association will be held in San Francisco, June 13-17, 1938.

The House of Delegates will convene at 10 a. m., Monday, June 13. In the House the representation of the various constituent associations for 1938, 1939 and 1940 is as follows:

Alabama	2	New Hampshire	1
Arizona	1	New Jersey	4
Arkansas	2	New Mexico	1
California	7	New York	19
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	7
District of Columbia	1	Oklahoma	2
Florida	2	Oregon	1
Georgia	3	Pennsylvania	11
Idaho	1	Rhode Island	1
Illinois	9	South Carolina	2
Indiana	4	South Dakota	1
Iowa	3	Tennessee	3
Kansas	2	Texas	6
Kentucky	3	Utah	1
Louisiana	2	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	7	West Virginia	2
Michigan	5	Wisconsin	3
Minnesota	3	Wyoming	1
Mississippi	2	Alaska	1
Missouri	4	Hawaii	1
Montana	1	Isthmian Canal Zone	1
Nebraska	2	Philippine Islands	2
Nevada	1	Puerto Rico	1

The fifteen scientific sections of the American Medical Association, the Medical Corps of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The Scientific Assembly of the Association will open with the general meeting to be held at 8 p. m., Tuesday, June 14. The sections will meet Wednesday, Thursday and Friday, June 15, 16 and 17, as follows:

CONVENING AT 9 A. M., THE SECTIONS ON

Surgery, General and Abdominal.
Ophthalmology.
Pediatrics.
Pharmacology and Therapeutics.
Nervous and Mental Diseases.
Dermatology and Syphilology.
Gastro-Enterology and Proctology.
Radiology.

CONVENING AT 2 P. M., THE SECTIONS ON

Practice of Medicine.
Obstetrics and Gynecology.
Laryngology, Otology and Rhinology.
Pathology and Physiology.
Preventive and Industrial Medicine and Public Health.
Urology.
Orthopedic Surgery.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., Monday, Tuesday, Wednesday and Thursday, June 13, 14, 15 and 16, and from 8:30 a. m. to 12 noon, Friday, June 17.

J. H. J. UPHAM, President.
NATHAN B. VAN ETTEN, Speaker, House of Delegates.
OLIN WEST, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES
A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state associations are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover members of the House of Delegates and of the newly elected members who have been reported to the Secretary in time to be included:

STATE DELEGATES

ALABAMA
J. N. Baker, Montgomery.
A. A. Walker, Birmingham.

ARIZONA

ARKANSAS
William R. Brooksher, Fort Smith.
Edward E. Barlow, Dermott.

CALIFORNIA
Charles A. Dukes, Oakland.
Edward M. Pallette, Los Angeles.
Robert A. Peers, Colfax.
William R. Molony Sr., Los Angeles.
Elbridge J. Best, San Francisco.
Lyell C. Kinney San Diego.
J. P. Nuttall, Santa Monica.

COLORADO
John W. Amesse, Denver.
Harold T. Low, Pueblo.

CONNECTICUT
Walter R. Steiner, Hartford.
George Blumer, New Haven.

DELAWARE
William H. Speer, Wilmington.

DISTRICT OF COLUMBIA
Henry C. Macatee, Washington.

FLORIDA
Meredith Mallory, Orlando.

GEORGIA
William H. Myers, Savannah.
Charles W. Roberts, Atlanta.
Olin H. Weaver, Macon.

IDAHO
E. N. Roberts, Pocatello.

ILLINOIS
Charles B. Reed, Chicago.
Charles S. Skaggs, East St. Louis.
W. E. Kittler, Rochelle.
C. E. Wilkinson, Danville.

INDIANA
H. G. Hamer, Indianapolis.
E. M. Shanklin, Hammond.
Don F. Cameron, Fort Wayne.
F. S. Crockett, La Fayette.

IOWA
Fred Moore, Des Moines.

KANSAS
J. F. Hassig, Kansas City.

KENTUCKY
A. T. McCormack, Louisville.
E. L. Henderson, Louisville.
Virgil E. Simpson, Louisville.

LOUISIANA
W. H. Seemann, New Orleans.
James Q. Graves, Monroe.

MAINE
William A. Ellingwood, Rockland.

MARYLAND
Harvey B. Stone, Baltimore.
Alfred T. Gundry, Catonsville.

MASSACHUSETTS
Richard H. Miller, Boston.
Edmond F. Cody, New Bedford.
John M. Birnie, Springfield.
David D. Scannell, Boston.
Dwight O'Hara, Waltham.
Charles E. Mongan, Somerville.
Walter G. Phippen, Salem.

MICHIGAN
H. A. Luce, Detroit.
T. R. K. Gruber, Eloise.
J. D. Brook, Grandville.
C. R. Keyport, Grayling.
L. G. Christian, Lansing.

MINNESOTA
W. A. Coventry, Duluth.
W. F. Braasch, Rochester.
James T. Christison, St. Paul.

MISSISSIPPI
Felix J. Underwood, Jackson.
Harvey F. Garrison, Jackson.

MISSOURI
Carl F. Vohs, St. Louis.
James R. McVay, Kansas City.

MONTANA
J. H. Irwin, Great Falls.

NEBRASKA
R. W. Fouts, Omaha.
Karl S. J. Hohlen, Lincoln.

NEVADA
Horace J. Brown, Reno.

NEW HAMPSHIRE
Deering G. Smith, Nashua.

NEW JERSEY
Andrew F. McBride, Paterson.
E. R. Mulford, Burlington.
Walt P. Conaway, Atlantic City.
Wells P. Eagleton, Newark.

NEW MEXICO
H. A. Miller, Clovis.

NEW YORK
Floyd S. Winslow, Rochester.
William D. Johnson, Batavia.
Thomas P. Farmer, Syracuse.
Edward R. Cunniffe, New York.
Grant C. Madill, Ogdensburg.
Thomas H. Cunningham, Glens Falls.

Frederick H. Flaherty, Syracuse.
James H. Borrell, Buffalo.
Terry M. Townsend, New York.
George W. Kosmak, New York.
Samuel J. Kopetzky, New York.
Frederic E. Sondern, New York.
James M. Flynn, Rochester.
Thomas A. McGoldrick, Brooklyn.
Charles H. Goodrich, Brooklyn.
George M. Fisher, Utica.
Peter Irving, New York.
Carl Boettiger, Flushing.
Adolph G. DeSanctis, New York.

NORTH CAROLINA

John Q. Myers, Charlotte.
M. L. Stevens, Asheville.

NORTH DAKOTA

A. P. Nachtwey, Dickinson.

OHIO

C. E. Kiely, Cincinnati.
C. W. Waggoner, Toledo.

OKLAHOMA

W. Albert Cook, Tulsa.
Horace Reed, Oklahoma City.

OREGON

John H. Fitzgibbon, Portland.

PENNSYLVANIA

Francis F. Borzell, Philadelphia.
George L. Laverty, Harrisburg.
Samuel P. Mengel, Wilkes-Barre.
Arthur C. Morgan, Philadelphia
Howard C. Frontz, Huntingdon.
J. Newton Hunsberger, Norristown.
J. Allen Jackson, Danville.
Frank P. Lytle, Birdsboro.
Curtis C. Mechling, Pittsburgh.
Charles G. Strickland, Erie.
Walter F. Donaldson, Pittsburgh.

RHODE ISLAND

Guy W. Wells, Providence.

SOUTH CAROLINA

Edgar A. Hines, Seneca.

SOUTH DAKOTA

J. R. Westaby, Madison.

TENNESSEE

E. G. Wood, Knoxville.
H. B. Everett, Memphis.
H. H. Shoulders, Nashville.

TEXAS

Holman Taylor, Fort Worth.
Felix P. Miller, El Paso.
S. E. Thompson, Kerrville.

UTAH

John Z. Brown Sr., Salt Lake City.

VERMONT

B. F. Cook, Rutland.

VIRGINIA

Wright Clarkson, Petersburg.
Walter B. Martin, Norfolk.
J. C. Flippin, Charlottesville.

WASHINGTON

Raymond L. Zech, Seattle.
J. H. O'Shea, Spokane.

WEST VIRGINIA

Walter E. Vest, Huntington.
Ivan Fawcett, Wheeling.

WISCONSIN

J. Gurney Taylor, Milwaukee.
Gunnar Gundersen, La Crosse.
Joseph F. Smith, Wausau.

WYOMING

George P. Johnston, Cheyenne.

ALASKA

HAWAII

F. J. Pinkerton, Honolulu.

ISTHMIAN CANAL ZONE

Lewis B. Bates, Ancon.

PHILIPPINE ISLANDS

Frederick W. Meyer, Capiz.

PUERTO RICO

J. H. Font, San Juan.

DELEGATES FROM THE SECTIONS AND GOVERNMENT SERVICES

PRACTICE OF MEDICINE

J. E. Paullin, Atlanta, Ga.

SURGERY, GENERAL AND ABDOMINAL

Fred W. Rankin, Lexington, Ky.

OBSTETRICS AND GYNECOLOGY

George Gray Ward, New York.

OPHTHALMOLOGY

Arthur J. Bedell, Albany, N. Y.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Burt R. Shurly, Detroit.

PEDIATRICS

William Weston, Columbia, S. C.

PHARMACOLOGY AND THERAPEUTICS

Chauncey D. Leake, San Francisco.

PATHOLOGY AND PHYSIOLOGY

J. J. Moore, Chicago.

NERVOUS AND MENTAL DISEASES

T. B. Throckmorton, Des Moines, Iowa.

DERMATOLOGY AND SYPHILOLOGY

Clyde L. Cummer, Cleveland.

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Stanley H. Osborn, Hartford, Conn.

UROLOGY

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Roland Hammond, Providence. R. I

GASTRO-ENTEROLOGY AND PROCTOLOGY

Curtice Rosser, Dallas, Texas.

RADIOLOGY

E. H. Skinner, Kansas City, Mo.

UNITED STATES ARMY

Roger Brooke, San Francisco.

UNITED STATES NAVY

UNITED STATES PUBLIC HEALTH SERVICE

Warren F. Draper, Washington, D. C.

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VICE PRESIDENT—Junius B. Harris, Sacramento, Calif.

SECRETARY AND GENERAL MANAGER—Olin West, Chicago.

TREASURER—Herman L. Kretschmer, Chicago.

SPEAKER, HOUSE OF DELEGATES—Nathan B. Van Etten, New York.

VICE SPEAKER, HOUSE OF DELEGATES—H. H. Shoulders, Nashville, Tenn.

EDITOR—Morris Fishbein, Chicago.

BUSINESS MANAGER—Will C. Braun, Chicago.

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JUDICIAL COUNCIL—John H. O'Shea, Spokane, Wash., 1938; Edward R. Cunniffe, New York, 1939; G. E. Follansbee, Chairman, Cleveland, 1940; Walter F. Donaldson, Pittsburgh, 1941; John W. Burns, Cuero, Texas, 1942; Olin West, Secretary, ex officio, Chicago.

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS—Frederic A. Washburn, Boston, 1938; R. L. Wilbur, Chairman, Stanford University, Calif., 1939; John H. Musser, New Orleans, 1940; Fred Moore, Des Moines, Iowa, 1941; Reginald Fitz, Boston, 1942; Fred W. Rankin, Lexington, Ky., 1943; Charles Gordon Heyd, New York, 1944; W. D. Cutter, Secretary, Chicago.

COUNCIL ON SCIENTIFIC ASSEMBLY—James E. Paullin, Chairman, Atlanta, Ga., 1938; J. Gurney Taylor, Milwaukee, Wis., 1939; A. A. Walker, Birmingham, Ala., 1940; J. C. Flippin, Charlottesville, Va., 1941; Clyde L. Cummer, Cleveland, 1942, and ex officio, the President-Elect, the Editor and the Secretary of the Association.

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BUREAU OF MEDICAL ECONOMICS—R. G. Leland, Director, Chicago.

CHEMICAL LABORATORY—Paul Nicholas Leech, Director, Chicago.

LIBRARY—Marjorie Hutchins Moore, Librarian, Chicago.

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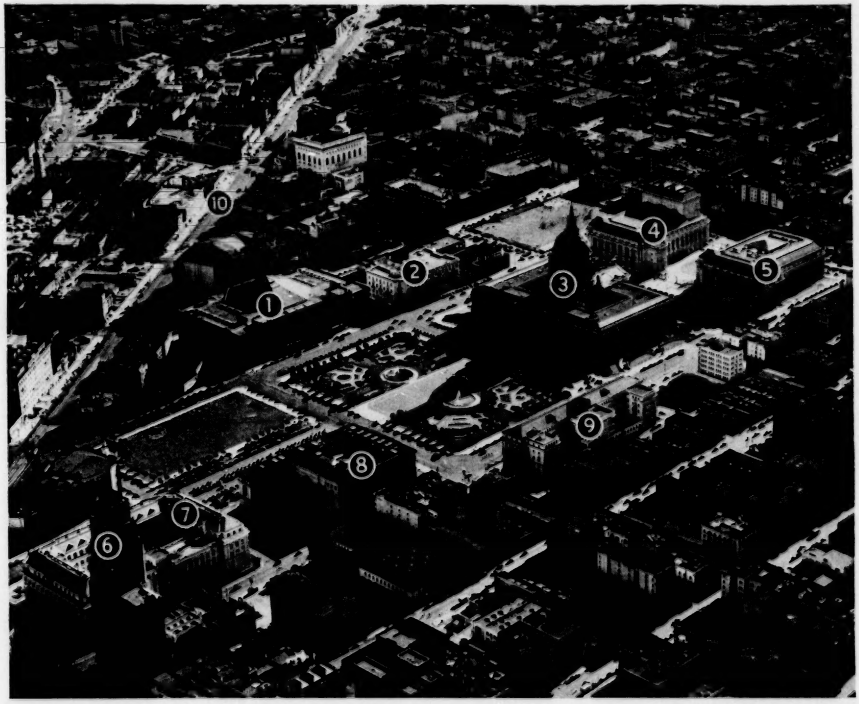
SAN FRANCISCO 1938—CALIFORNIA INVITES YOU

It lies not East or West,
But like a scroll unfurled,
Where the hand of God hath hung it,
Down the middle of the world.

A coast line of more than 1,000 miles; 157,000 square miles in area; 6,500,000 people; balmy, semitropical climate and snow-clad mountains; fertile valleys; forest lands and state and national parks; ocean shore resorts and inland vacation grounds —all of nature's resources essential to man's comfort, happiness, business and pursuit of avocation—that is California.

San Francisco, 47.5 square miles in area, is located on a peninsula with the Pacific ocean on the west and the bay on the north and east, forming the largest inland harbor in the world. The San Francisco-Oakland Bay Bridge and the Golden Gate Bridge, acknowledged engineering feats, have recently provided avenues of quicker access to the mainland, displacing the famed ferries of former days.

In the heart of the city, within walking distance of the leading hotels, is the Civic Center, bounded by Van Ness, Fulton, Hyde and McAllister streets—four by two city blocks in area. Here are located the Civic Auditorium, Memorial Opera House,



AIR VIEW OF SAN FRANCISCO'S CIVIC CENTER AND ENVIRONS

1. AUDITORIUM
2. BOARD OF HEALTH BUILDING
3. CITY HALL
4. OPERA HOUSE
5. VETERANS' BUILDING
6. EMPIRE HOTEL
7. FEDERAL BUILDING
8. LIBRARY
9. STATE BUILDING
10. SOUTH MARKET STREET

110
938

SAN FRANCISCO

Historians, poets and artists have vied in their descriptions of San Francisco, but the city itself surpasses description. In June, San Francisco's maximum and minimum temperature is from 67 to 50 degrees. The days are usually bright and sunny, the nights cool with no rain and a minimum of fog in the early morning. The visitor will do well to have a light top coat for weather emergencies.

Veterans' Memorial Building, City Hall, City Health and Public Library buildings and State and Federal buildings. In the auditoriums of these buildings all the meetings and exhibits will be housed.

The visitor to San Francisco cannot obtain the full savor of the city without having enjoyed the hospitality and comforts of its fifty-four first class hotels and three hundred famed restaurants. For this session the local committee has under reservation, by contract, five thousand rooms in first class

Frederick H. Flaherty, Syracuse.
James H. Borrell, Buffalo.
Terry M. Townsend, New York.
George W. Kosmak, New York.
Samuel J. Kopetzky, New York.
Frederic E. Sondern, New York.
James M. Flynn, Rochester.
Thomas A. McGoldrick, Brooklyn.
Charles H. Goodrich, Brooklyn.
George M. Fisher, Utica.
Peter Irving, New York.
Carl Boettiger, Flushing.
Adolph G. DeSanctis, New York.

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C. W. Waggoner, Toledo.

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W. Albert Cook, Tulsa.
Horace Reed, Oklahoma City.

OREGON
John H. Fitzgibbon, Portland.

PENNSYLVANIA
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George L. Laverty, Harrisburg.
Samuel P. Mengel, Wilkes-Barre.
Arthur C. Morgan, Philadelphia.
Howard C. Frontz, Huntingdon.
J. Newton Hunsberger, Norristown.
J. Allen Jackson, Danville.
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ALASKA

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F. J. Pinkerton, Honolulu.

ISTHMIAN CANAL ZONE
Lewis B. Bates, Ancon.

PHILIPPINE ISLANDS
Frederick W. Meyer, Capiz.

PUERTO RICO
J. H. Font, San Juan.

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COUNCIL ON SCIENTIFIC ASSEMBLY—James E. Paullin, Chairman, Atlanta, Ga., 1938; J. Gurney Taylor, Milwaukee, Wis., 1939; A. A. Walker, Birmingham, Ala., 1940; J. C. Flippin, Charlottesville, Va., 1941; Clyde L. Cummer, Cleveland, 1942, and ex officio, the President-Elect, the Editor and the Secretary of the Association.

COUNCIL ON PHARMACY AND CHEMISTRY (Standing Committee of Board of Trustees)—J. Howard Brown, Baltimore, 1939; C. W. Edmunds, Ann Arbor, Mich., 1939; David P. Barr, St. Louis, 1939; Morris Fishbein, Chicago, 1940; G. W. McCoy, Washington, D. C., 1940; E. M. Bailey, New Haven, Conn., 1940; Elmer M. Nelson, Washington, D. C., 1940; Torald Sollmann, Chairman, Cleveland, 1941; W. C. Rose, Urbana, Ill., 1941; E. M. K. Geiling, Chicago, 1942; W. W. Palmer, New York, 1942; S. W. Clausen, Rochester, N. Y., 1942; R. A. Hatcher, New York, 1943; E. E. Irons, Chicago, 1943; H. N. Cole, Cleveland, 1943; Paul Nicholas Leech, Secretary, Chicago.

COUNCIL ON PHYSICAL THERAPY (Standing Committee of Board of Trustees)—W. E. Garrey, Nashville, Tenn., 1939; W. W. Coblentz, Washington, D. C., 1939; John S. Coulter, Chicago, 1939; Howard T. Karsner, Cleveland, 1940; Frank R. Ober, Boston, 1940; Frank D. Dickson, Kansas City, Mo., 1940; A. U. Desjardins, Rochester, Minn., 1941; H. B. Williams, New York, 1941; Frank H. Krusen, Rochester, Minn., 1941; Ralph Pemberton, Philadelphia, 1942; Harry E. Mock, Chairman, Chicago, 1942; Anthony C. Cipollaro, New York, 1942; Olin West, ex officio, Chicago; Morris Fishbein, ex officio, Chicago; Howard A. Carter, Secretary, Chicago.

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BUREAU OF MEDICAL ECONOMICS—R. G. Leland, Director, Chicago.

CHEMICAL LABORATORY—Paul Nicholas Leech, Director, Chicago.

LIBRARY—Marjorie Hutchins Moore, Librarian, Chicago.

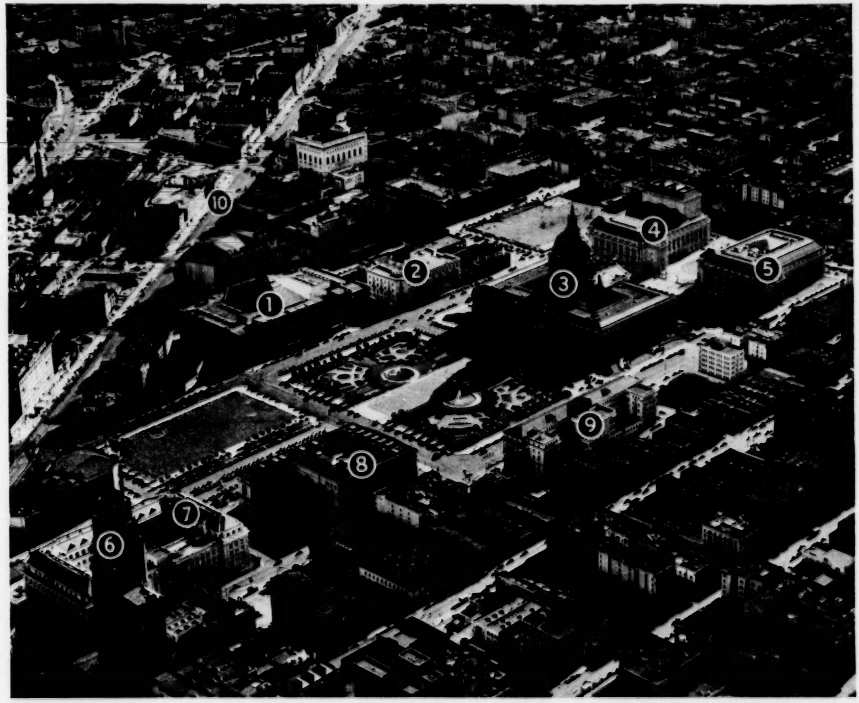
SAN FRANCISCO 1938—CALIFORNIA INVITES YOU

It lies not East or West,
But like a scroll unfurled,
Where the hand of God hath hung it,
Down the middle of the world.

A coast line of more than 1,000 miles; 157,000 square miles in area; 6,500,000 people; balmy, semitropical climate and snow-clad mountains; fertile valleys; forest lands and state and national parks; ocean shore resorts and inland vacation grounds—all of nature's resources essential to man's comfort, happiness, business and pursuit of avocation—that is California.

San Francisco, 47.5 square miles in area, is located on a peninsula with the Pacific ocean on the west and the bay on the north and east, forming the largest inland harbor in the world. The San Francisco-Oakland Bay Bridge and the Golden Gate Bridge, acknowledged engineering feats, have recently provided avenues of quicker access to the mainland, displacing the famed ferries of former days.

In the heart of the city, within walking distance of the leading hotels, is the Civic Center, bounded by Van Ness, Fulton, Hyde and McAllister streets—four by two city blocks in area. Here are located the Civic Auditorium, Memorial Opera House,



AIR VIEW OF SAN FRANCISCO'S CIVIC CENTER AND ENVIRONS

1. AUDITORIUM
2. BOARD OF HEALTH BUILDING
3. CITY HALL
4. OPERA HOUSE
5. VETERANS' BUILDING
6. EMPIRE HOTEL
7. FEDERAL BUILDING
8. LIBRARY
9. STATE BUILDING
10. SOUTH MARKET STREET

SAN FRANCISCO

Historians, poets and artists have vied in their descriptions of San Francisco, but the city itself surpasses description. In June, San Francisco's maximum and minimum temperature is from 67 to 50 degrees. The days are usually bright and sunny, the nights cool with no rain and a minimum of fog in the early morning. The visitor will do well to have a light top coat for weather emergencies.

Veterans' Memorial Building, City Hall, City Health and Public Library buildings and State and Federal buildings. In the auditoriums of these buildings all the meetings and exhibits will be housed.

The visitor to San Francisco cannot obtain the full savor of the city without having enjoyed the hospitality and comforts of its fifty-four first class hotels and three hundred famed restaurants. For this session the local committee has under reservation, by contract, five thousand rooms in first class

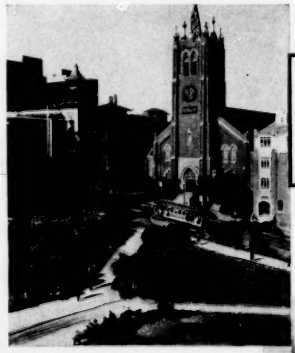
hotels, with additional accommodations available should the attendance registration demand.

Golden Gate Park, with 1,013 acres in the heart of the city, provides scenic beauty, trees, flowers, a polo field, playgrounds, a museum, a zoo, a tea garden, a bandstand, ball and rugby fields, bridle paths, lakes, fountains and statues. The famed harbor of San Francisco Bay is seventy miles long and from four to ten miles wide, connected with the Pacific only by the Golden Gate, a strait a mile across its narrowest point.

The hills of San Francisco give to the city its picturesque effect. Of these hills, Telegraph, Russian, Nob Hill and Twin Peaks are the more important. Each has its own particular and attractive views.

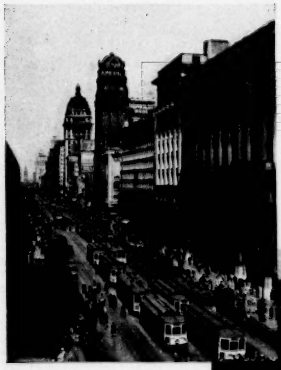
At the Presidio, the headquarters of the corps area, the federal troops are stationed. Here also is one of the army's largest hospitals, the Letterman General Hospital. Situated along the bay and the Golden Gate a drive through this army post with its tree-lined drives, officers' homes, hospital, parade grounds, cemetery and administration buildings never fails to evoke expressions of delight and admiration. Beyond the Presidio toward the sea is the great coast artillery post, Fort Winfield Scott, defending the entrance to San Francisco Bay.

Fisherman's Wharf, the Embarcadero, Chinatown, Yacht Harbor, Funston Field and the Court of Honor comprise additional points of interest.

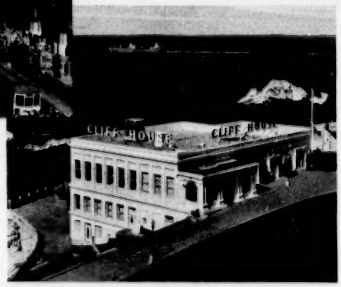


Right—ST. MARY'S CHURCH ON EDGE OF CHINATOWN

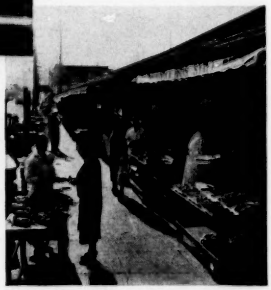
Views About San Francisco



A VIEW OF MARKET STREET



THE CLIFF HOUSE, A FAVORITE DINING PLACE; FAMOUS SEAL ROCKS AND PACIFIC OCEAN



THE FISHERMAN'S WHARF

MEDICAL CENTERS

The California Medical Association, with more than 6,100 members, representing 85.5 per cent of the state's licensed resident physicians, is the fourth unit in size in the federacy of medicine. Its thirty-nine county units, some of them larger than a combination of Eastern states, are centered in the association headquarters at 450 Sutter Street, San Francisco.

Historical records show that organization of the San Francisco County Medical Society was "unsuccessfully attempted on June 22, 1850, being preceded by the successful formation in Sacramento of a medical society in May of 1850 and by a more or less inconsequential group in Los Angeles in January 1850. In San Francisco on Nov. 17, 1853, a county medical society was eventually formed, sixty-three members enrolling."

The San Francisco County Medico-Chirurgical Association was mentioned in the first volume of the *Medical Press*, which reported that "this society was organized in August 1885. Though its proceedings have been marred by considerable discord, it has still done much in the cause of the profession. . . . This association . . . is and always has been the only *working* medical society in this city." This second reference seems to justify the inference that two medical societies were active in San Francisco during the early days. This supposition receives support from editorial comments:

"San Francisco Medical Society.—This, we believe, was the first medical society formed in this city. It has, however, only been a society in name for the most part. During the presidency of Prof. Henry Gibbons, however, it was brought into a state of considerable usefulness. Quite a number of very interesting meetings were held, with animated discussions upon medical subjects during the year. It has generally been controlled by medical gentlemen who appeared to think their highest duties were performed when they succeeded in carrying the yearly elections through satisfactorily and had the officers duly announced in all our daily papers."

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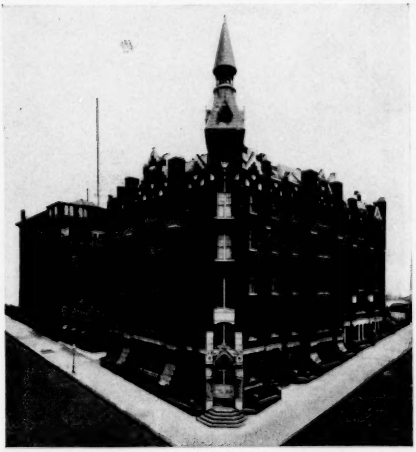
At first meetings of the San Francisco County Medical Society were held in various halls about the downtown district. After the earthquake and fire of 1906, quarters were rented in the Butler Building at the corner of Stockton and Geary streets, and in 1918 the society moved to the Medical Building, at the corner of Bush and Hyde streets. From the earliest records one finds constant expression of the wish to own its own home. In 1926, largely through the efforts of the late Reginald Knight Smith, the present home was purchased. It was formerly a private residence and is unquestionably the finest building of its type in San Francisco. In spite of the fact that no alterations have been made in the building, it is admirably suited to the needs of the medical society for the holding of its meetings, for its administration headquarters and for the housing of its splendid library.

One of the achievements of the Alameda County Medical Association during the past year has been the growth of its Insurance Association of Approved Hospitals. The following facts are based on figures as of Dec. 1, 1937: There are approximately 9,000 members and 454 claims filed, amounting



STANFORD UNIVERSITY SCHOOL OF MEDICINE, SAN FRANCISCO

to $29,106.42 during the past year. The average hospital stay is 7.78 days and the average cost per day is $8.15. The inclusion of San Francisco, Contra Costa and San Mateo counties has played an important part in the year's growth. The hospitals under contract with this association include:

Alameda County: Peralta, Alta Bates, Providence, East Oakland, Berkeley General, Samuel Merritt and Alameda Sanitarium.

Contra Costa: Antioch, Concord, Martinez and Richmond Cottage.

San Francisco: Children's, Green's Eye, Mary's Help, Mount Zion, St. Joseph's, St. Luke's, St. Mary's, Stanford and University of California.

San Mateo: Mills Memorial.

The Alameda County Medical Association part pay plan continues to function efficiently, with 100 per cent cooperation from the members. Sponsored by the antituberculosis association of this county, material for tuberculin tests is available to any physician requesting it.

Clinic activities at the various hospitals include an obstetric clinic at Providence, a general pediatric clinic at Children's and a general clinic at the Berkeley General, and a cancer clinic and dermatology clinic at Alameda County Hospital. There is keen interest on the part of the members in these various clinics.

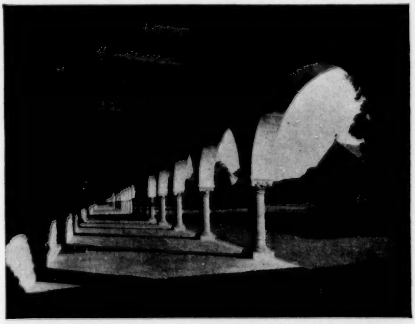
During the past year regular monthly meetings of the Alameda County Medical Association have been held and well balanced programs have been presented. Subjects of interest to the greater majority were selected. Officers and members of

SAN FRANCISCO SKYLINE AND THE FERRY BUILDING

the council entertained Dr. Olin West, Secretary of the American Medical Association, and on another occasion the director of the Bureau of Medical Economics of the American Medical Association was our guest.

The first annual hobby show was presented by some of our talented members and gave pleasure to all who attended. The beautiful work produced in such varied fields was surprising.

The publicity committee of the association is becoming more active and efficient. The cooperation between the newspapers,

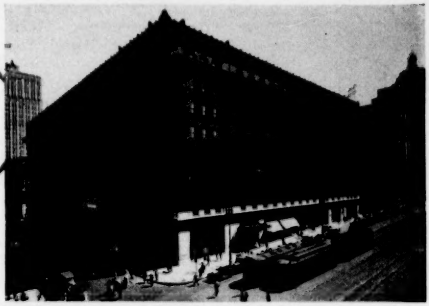


STANFORD UNIVERSITY QUADRANGLE, PALO ALTO

doctors and hospitals is evidence that such friendly cooperation will provide more accurate medical information and will tend to lessen the amount of misinformation published. Such censorship of reports will be of great benefit to both medical practitioners and the public.

The Alameda County Medical Association has cooperated to the fullest degree with the other medical organizations in the state in furthering the understanding of the significance of the aims of scientific medicine for the benefit of the body politic.

San Francisco Hotels



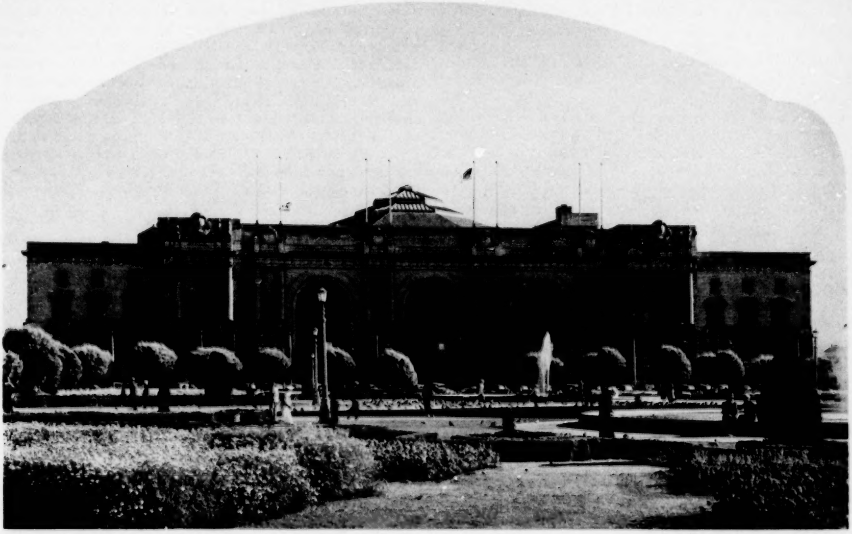
PALACE HOTEL

HOTEL SIR FRANCIS DRAKE,
WHERE THE HOUSE OF DELEGATES
WILL MEET

Above—DRAKE WILTSHIRE HOTEL
Left—HOTEL EMPIRE

THE ST. FRANCIS HOTEL

HOTEL BELLEVUE



CIVIC AUDITORIUM—REGISTRATION AND THE EXHIBITS WILL BE HELD HERE

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MEMORIAL OPERA HOUSE (left) AND VETERANS' BUILDING

In addition to these, San Jose, at the south end of the bay, fifty miles from San Francisco, Contra Costa, Vallejo and Marin compose the Bay area county medical organizations.

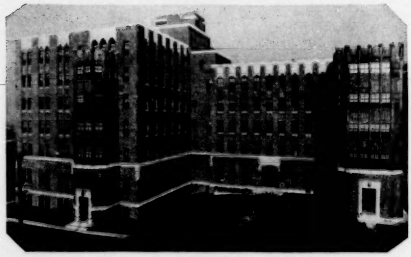
MEDICAL COLLEGES

Toland Medical College, established in 1862, was absorbed by the University of California in 1872 and became its medical school. In 1898 buildings were erected on the San Francisco campus of the university, from which the present Medical Center has developed. All the divisions of the medical school, except those of the first year, are housed at the Medical Center. The University Hospital of 300 beds and the outpatient department with 185,000 annual visits are conducted as clinical teaching activities. The first year departments of anatomy, physiology and biochemistry are in the Life Sciences Building on the Berkeley campus of the university. Besides the Medical School, the Medical Center, a sixteen acre tract of land, includes the Colleges of Dentistry and Pharmacy, the Training School for Nurses and the George Williams Hooper Foundation, which is actively engaged in medical research. The clinics of the College of Dentistry are closely coordinated with those of the medical outpatient department.

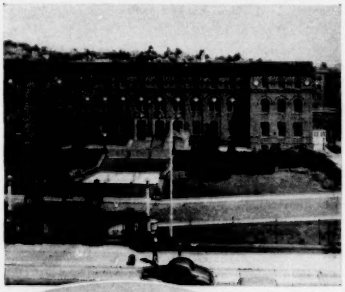
Stanford University School of Medicine came into being in 1908, when all the properties and equipment of the Cooper Medical College, founded in 1882, were transferred to Stanford University. The medical school is an integral part of Stanford University and has the following eleven departments: Anatomy, Bacteriology and Experimental Pathology, Chemistry, Medicine, Obstetrics and Gynecology, Pathology, Pediatrics, Pharmacology and Therapeutics, Physiology, Public Health and Preventive Medicine, and Surgery. The first four trimesters of undergraduate teaching are done at the university campus and the remainder of the teaching is done at Stanford University School of Medicine, Sacramento and Webster streets, San Francisco. The medical school owns and controls Lane Hospital and Stanford University Hospital, and the university owns and controls Lane Medical Library, which is one of the foremost medical libraries of this country, containing more than eighty-six thousand volumes. The medical school accepts only sixty students in each of its classes and requires a one year internship before awarding the degree of doctor of medicine. The medical school faculty, by using the clinical facilities of the Lane, Stanford and other affiliated hospitals, trains graduates in medicine in all the special fields. The medical school directs an outpatient clinic, which receives in the neighborhood of 150,000 patient visits annually. The medical school is financed entirely by Stanford University endowment funds and private donations.

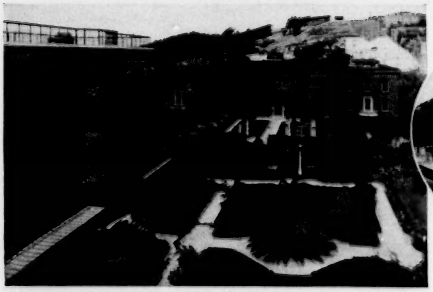
The San Francisco Hospital

Below: Left—MATERNITY BUILDING
Right—PSYCHOPATHIC BUILDING

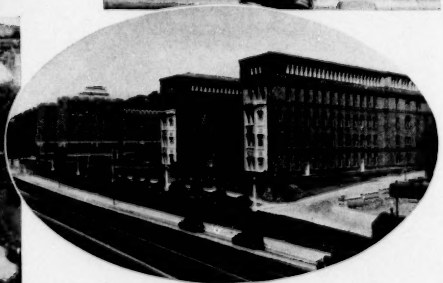


Below: MAIN ENTRANCE ADMINISTRATION BUILDING





Above: TUBERCULOSIS BUILDING (left) AND ISOLATION BUILDING



Above: PSYCHOPATHIC BUILDING (left) AND BUILDINGS NO. 1 AND NO. 2, MEN'S WARDS

SAN FRANCISCO HOSPITAL

The San Francisco Hospital, an institution within the department of public health of the city and county of San Francisco and deriving its funds for operation from the public treasury, is limited to accepting only those patients who are unable to provide for their own care in a private hospital.

It is a general hospital with a capacity of 1,400 beds, offering, in addition to general medical and surgical services, a tuber-

culosis division, an isolation division for the care of the communicable diseases and a new psychopathic unit. As adjuncts, city physicians, giving care in the home to those who cannot afford to have the services of a privately practicing physician, are on call through the Social Service Division, and an outpatient obstetric service is given to expectant mothers in their homes when they too cannot have private medical care. Although a follow-up care for discharged patients is given, no general outpatient care is provided. The two university medical schools give the city and county of San Francisco invaluable service, in that members of the faculties of these educational centers serve as visiting staff members.

The visiting staff consists of 150 physicians and surgeons, appointed by the director of public health from the medical teaching staffs of the University of California Medical School and Stanford University Medical School.

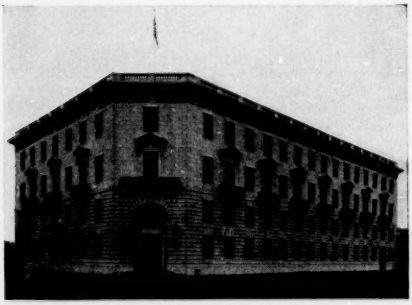
THE EMERGENCY HOSPITALS

The Emergency Hospital Service, so frequently linked with the police department of most large cities, is also a part of the department of public health in San Francisco.

The service includes twenty-four hour service in each of six emergency hospitals located in various parts of the city. Fourteen radio equipped ambulances are operated, each manned with a driver and a trained hospital steward. A surgeon and a nurse, working on an eight hour shift, are in constant attendance at the Emergency Hospital. The administrative staff, under the director of public health, is the chief surgeon and assistant chief surgeon, one of whom is always on call, and the chief steward. More than 70,000 cases were handled during the past year, with 32,000 ambulance calls.

THE DEPARTMENT OF PUBLIC HEALTH

In San Francisco the activities of the Department of Public Health include, in addition to those services usually referred to as the strictly preventive and public health functions, the institutional services, comprising the San Francisco Hospital (a general hospital), the Laguna Honda Home (for the aged and infirm), the Hassler Health Home (for the tuberculous) and the Emergency Hospital Service (including ambulance service). This administrative setup has been in effect in San Francisco for many years and was incorporated in the charter of 1900 and the new freeholders' charter of 1932.



BOARD OF HEALTH BUILDING, CIVIC CENTER

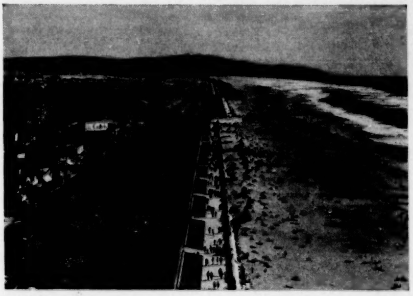
While under the charter of 1900 the department was administered by the board of health through its executive officer, the health officer, the new freeholders' charter of 1932 centralizes the responsibility in the director of public health. The Health Advisory Board, made up of three physicians, a dentist and three laymen, appointed by the chief administrative officer to terms of four years each, has only advisory powers.

Housed since 1932 in a modern building erected for its sole use, the Department of Public Health has a building of which it may well be proud and which is undoubtedly one of the finest in the United States.

SUGGESTIONS FOR PERSONAL COMFORT IN CALIFORNIA

1. In San Francisco the temperature in June varies between 50 and 70 degrees. The afternoons and nights are cool. Bring a light spring suit and top coat. Summer suits are not advisable.

2. The June temperature of Los Angeles varies from 70 to 80 degrees with cool nights. Summer clothes add to personal comfort.



THE OCEAN BEACH BELOW CLIFF HOUSE. SAND DUNES IN DISTANCE

3. Northern California along the coast and redwood highways has a temperature comparable to June in the Middle West or East.

4. On the coast highway south of San Francisco the temperature ranges from ten to twenty degrees higher than in San Francisco.

5. Inland in the Sacramento and San Joaquin valleys the temperature ranges from 70 to 90 degrees, with hot spells during which the temperature reaches from 100 to 110. In the mountain regions and national parks, the days are comfortably warm with cool nights.

6. California's automobile highways are maintained in almost perfect condition. This is especially true of the main trunk lines. They are well posted, and curves and steep grades are well marked. If driving, bring your car ownership certificate and driver's license, as you will be stopped at the borders and given a special permit without charge. There is a federal government fee of $2 to enter national parks. This is paid at any entrance roadgate.

7. Sun glasses add to personal comfort.

CALIFORNIA

The hurried two to four day tourists' itinerary is entirely too brief to gain a true picture of the state. One will never regret the time spent in a more extended visit to California's points of special interest. The suggestion is advanced that plans be made to travel direct, without intervening stops, in order that time may be allotted to visits to San Diego, Los Angeles, the Coast Highway, Santa Barbara, Monterey Bay and Del Monte, the Santa Clara Valley, the Valley of the Moon, Big Basin, Yosemite National Park, Redwood Highway, Mare Island, Oakland, Sacramento Valley and the Sierra resorts. From timberlands with its lakes and streams, fertile valleys, grazing plains, mountainous regions, state parks and playgrounds and sportlands to the metropolitan centers, California affords the tourist and vacationist an ever varying, unending opportunity of rest, joy and inspiration. To see, to know, to appreciate fully, one needs to include these centers in a visit to California.

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TRANSPORTATION

Railroad Rates to San Francisco

Because of the reduction in one way fares to three cents a mile for travel in sleeping and parlor cars, which closely approximates the former convention fare basis, the use of convention fares has been discontinued in the territories of the Central Passenger, Trunk Line and New England Passenger Associations.

In the territory of the Transcontinental Passenger Association and in that part of the territory of the Western Passenger Association east of and including El Paso, Texas, Albuquerque, N. M., Ogden and Salt Lake City, Utah, and the state of Montana, the following round trip fares, for which no certificates of any kind will be necessary, have been authorized from the points named to San Francisco: Chicago, $90.30; Kansas City, Mo., $75.60; Memphis, Tenn., $89.25; Minneapolis, $90.30; New Orleans, $89.25; Omaha, $75.60; St. Louis, $85.60; St. Paul, $90.30. These fares include the privilege of going by any authorized route and returning by any other authorized route. They are subject to change without notice.

We have also been informed that the following round trip fares for which no certificate of any kind will be necessary have been authorized from the points named to San Francisco but are subject to change without notice: Washington, D. C., $130.40; Boston, Mass., $148.55; Grand Rapids, Mich., $101; Buffalo, N. Y., $120.65; Cincinnati, Ohio, $105.45; Philadelphia, Pa., $136.10; Norfolk, Va., $131.10; Birmingham, Ala., $97.90; Lexington, Ky., $102.70; Nashville, Tenn., $96.55; Baltimore, Md., $130.40; Detroit, Mich., $106.75; Albany, N. Y., $137.35; New York, N. Y., $141.50; Cleveland, Ohio, $110; Pittsburgh, Pa., $117.40; Parkersburg, W. Va., $117.10; Atlanta, Ga., $104.90; Louisville, Ky., $99.95.

All members who expect to attend the session are urged to confer with their home ticket agents, who will be able to give them more specific information regarding fares and routes.

Special Trains to San Francisco With Stop-Overs

De luxe special trains restricted to physicians, their families and friends are available to San Francisco for the annual session, leaving Chicago June 6. There will be stop-overs at Lamy, N. M., for a sightseeing trip through the Indian Pueblo district by motor coach, and at the Grand Canyon in Arizona and at Los Angeles; then the party will go by steamship to Avalon on Santa Catalina Island, returning to Los Angeles, and on to San Francisco by train, arriving 9 a. m., Monday, June 13. On the return trip east there is a choice of two routes, each with stop-over sightseeing trips. Returning, route one is through Portland, Seattle, Victoria, Vancouver, Canadian Rockies, Lake Louise and Banff. Route two is by Yellowstone National Park, Salt Lake City, Royal Gorge, Colorado Springs and Denver. By route one the train arrives in Chicago at 4:40 p. m., June 25, and by route two, June 27, at 9:23 a. m. Twenty-five state medical societies have become interested in these special trains for physicians, and a descriptive folder giving additional information about the sightseeing side trips may be had from the secretaries of these state societies or from the American Express Travel Service, 180 North Michigan Avenue, Chicago.

Chicago Medical Society Special

The "Chicago Medical Society Special" train will leave Chicago from the Union Station at 9 p. m., Thursday, June 9, arriving in San Francisco at 8:30 a. m., Sunday, June 12. The train will be operated on a fast schedule and no excess fare will be charged. Members of the American Medical Association, their families and friends are cordially invited to join this group. Dr. Frank P. Hammond, 30 North Michigan Avenue, Chicago, is the chairman of the transportation committee of the Chicago Medical Society.

Golfers' Special

The "Golfers' Special" will bring you to San Francisco a most pleasant way. This American Medical Golfing Association tour includes an ocean voyage from New York to New Orleans (six days) on the S. S. *Dixie*, sailing June 1. The first game of golf will be played in New Orleans on June 7, followed by five games on excellent courses on the outgoing trip, with stops and sight-seeing at Houston, Galveston and San Antonio, Texas, and Los Angeles, including Hollywood and Del Monte, Calif. The return journey will be via Portland, Seattle, Vancouver, Lake Louise and Banff, with two additional games of golf, more sight-seeing and a steamship voyage up Puget Sound. Non-golfers as well as golfers (and their ladies) are invited.

If you can't spend the time for the ocean voyage from New York, join the Golfers' Special at New Orleans on June 7. If you can't join the Golfers' Special on the trip to San Francisco, plan on taking the return journey through the glorious Northwest, including Vancouver, Lake Louise and Banff.

Drop a card for detailed information and rates to Mr. W. J. Burns, Executive Secretary, Michigan State Medical Society, 2020 Olds Tower, Lansing, Mich.

Automobile Travel

The California State Automobile Association suggests three automobile routes from Chicago to San Francisco; namely, a southern, an overland and a northern route. The southern route leads one through St. Louis, Oklahoma City, Albuquerque and Los Angeles to San Francisco, and a detour may be made to the south rim of the Grand Canyon; the overland route, through Omaha, Cheyenne, Salt Lake City, Reno and Oakland to San Francisco; the northern route, through Minneapolis, Fargo, Helena, Spokane, Seattle, Portland and San Rafael to San Francisco, and a detour may be made to Yellowstone National Park.

FLYING TO SAN FRANCISCO

Air Travel

Plans are being made to provide frequent airplane service between New York, Chicago, Denver and San Francisco at the time of the annual session. California is just a "good night's sleep," from New York, Chicago and other eastern cities because of fast overnight sleeper plane service.

In addition to overnight schedules from coast to coast, passengers may choose convenient scenic daylight flights. For those planning to visit other points on the Pacific Coast either before or after the session there is a border to border service linking Vancouver, Seattle, Tacoma, Portland, San Francisco, Oakland, Los Angeles and San Diego.

In some instances it is possible for passengers, in traveling by plane to San Francisco, to go to Los Angeles at no extra cost. Commuter service, with seven flights daily, is operated between San Francisco and Los Angeles, the 330 mile nonstop flight requiring only two hours.

Many California cities have air service, and planes land close to all western vacation lands. Yosemite National Park is but a short distance from Fresno; fishing and hunting grounds are conveniently reached from Medford or Portland, and Tacoma and Seattle are gateways to Mount Rainier National Park.

It is suggested that those interested in traveling to San Francisco by airplane consult the agents of the airlines serving their respective territories.

REGISTRATION

The Bureau of Registration will be located in the Auditorium in Civic Center, Grove street, between Polk and Larkin streets. Members of the Subcommittee on Registration of the Local Committee on Arrangements will be on hand to assist those who desire to register. A branch postoffice in charge of government postoffice officials will be available for visitors, and an information bureau will be operated in connection with the Bureau of Registration.

Who May Register

Only Fellows, Affiliate, Associate and Honorary Fellows, and Invited Guests may register and take part in the work of the sections. Fellows of the Scientific Assembly are those who have, on the prescribed form, applied for Fellowship, subscribed to THE JOURNAL, and paid their Fellowship dues for the current year. The annual Fellowship dues provide a subscription to THE JOURNAL for one year. Fellowship cards are sent to all Fellows after payment of annual dues, and these cards should be presented at the registration window. Any who have not received cards for 1938 should secure them at once by writing to the American Medical Association, 535 North Dearborn Street, Chicago.

Members in Good Standing Eligible to Apply for Fellowship in the Association

Members in good standing in component county medical societies are members of constituent state associations and of the American Medical Association. All members in good standing may apply for Fellowship in the Scientific Assembly and are urged to qualify as Fellows before leaving home in order that pocket cards may be secured and brought to San Francisco so that registration can be more easily and more promptly effected.

Application forms may be had on request.

Those subscribers to THE JOURNAL who have not received pocket cards for 1938 should write to the American Medical Association for application blanks and information as to further requirements.

Register Early

Fellows living in San Francisco, as well as all other Fellows who are in San Francisco on Monday and Tuesday, should register as early as possible. The names of those who register will be included in the issue of the *Daily Bulletin* appearing the next day, and this will enable visiting physicians to find friends if they have registered.

Suggestions That Will Facilitate Registration

Fellows should fill out completely the spaces on both sections of the front of the *white* registration card, which will be found on the tables in front of the Registration Bureau.

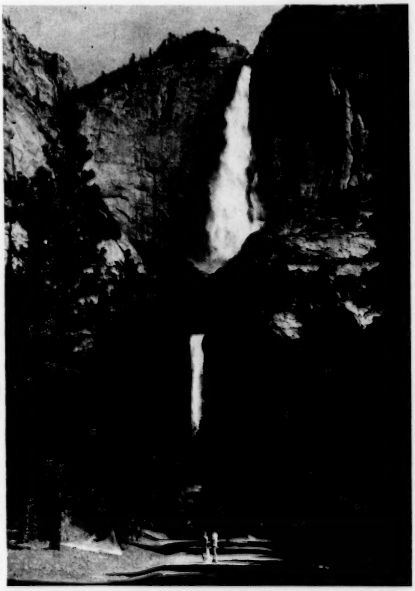
Physicians who desire to qualify as Fellows should fill out completely the spaces on both sections of the front of the *blue* registration card, and sign the application on the back. These cards will be found on the tables.

Entries on the registration cards should be written plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*, published on Tuesday, Wednesday, Thursday and Friday of the week of the session.

Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out *white* registration card, together with their pocket cards, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a badge, a copy of the official program and other printed matter of interest to those attending the annual session.

As previously stated, it will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than May 21. Any applications that are received later than May 21 will be given prompt attention, but the Fellowship pocket card may not reach the applicant in time for him to register at the San Francisco session.

It will be possible for members of the organization to qualify as Fellows at San Francisco. In order to do this, applicants for Fellowship will be required to fill out both sections of the front of the *blue* registration card and to sign the formal application that is printed on the reverse side of the card. It is suggested that those members who apply for Fellowship at San Francisco bring with them their state membership cards for 1938. The state membership card should be presented along with the filled in *blue* registration card at the window in the booth marked "Applicants for Fellowship and Invited Guests."



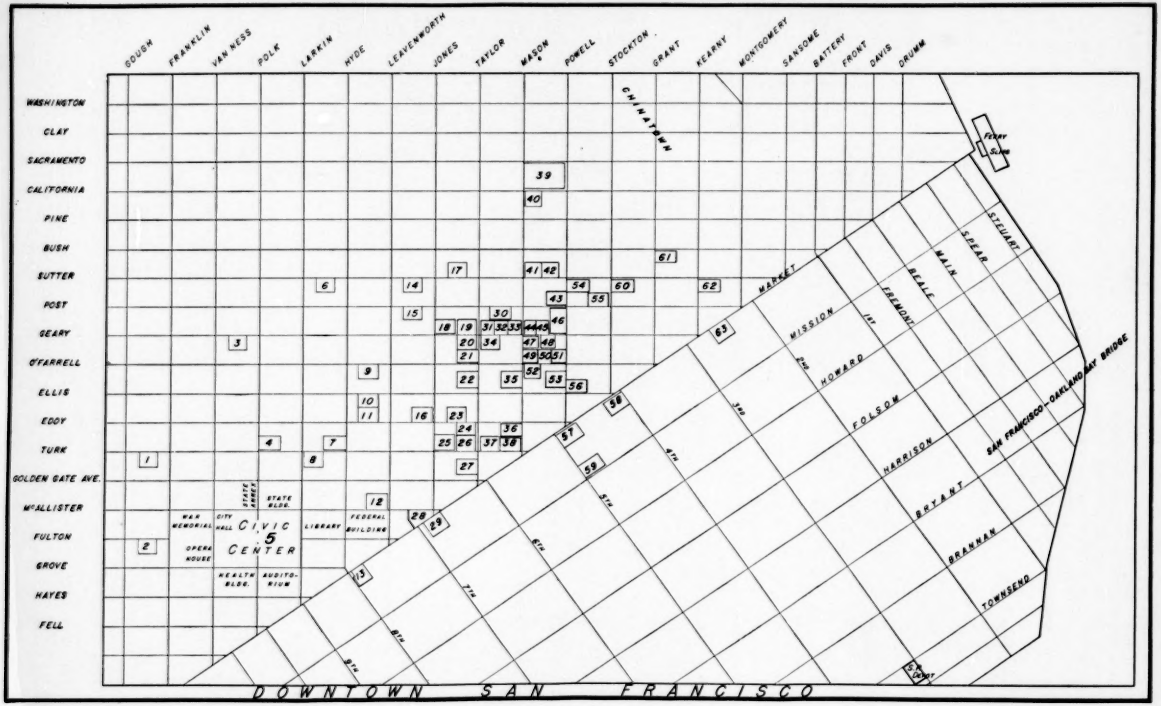
YOSEMITE FALLS, ABOUT 187 MILES FROM SAN FRANCISCO—THE UPPER FALL ALONE DROPS 1,430 FEET

As already stated, registration can be effected more easily and more promptly if members will qualify as Fellows before leaving home.

Registration for General Officers and Delegates at the Hotel Sir Francis Drake

General Officers of the American Medical Association and members of the House of Delegates may register for the Scientific Assembly in the French Room, adjacent to the Empire Room of the Hotel Sir Francis Drake. This arrangement is made for the convenience of the members of the House of Delegates, which will convene on Monday morning at 10 o'clock in the Empire Room of the Hotel Sir Francis Drake. Delegates are requested to register for the Scientific Assembly before presenting credentials to the Reference Committee on Credentials of the House of Delegates. Registration of delegates for the Scientific Assembly will begin at 8 o'clock, Monday morning, June 13, and delegates are urged to register early so that all members of the House of Delegates may be seated in time for the opening session of the House.

MAP OF SAN FRANCISCO AND KEY TO MAP



Alexander Hamilton. 9	Chancellor 43	Federal 29	Keystone 58	Maurice 15	Plaza 55	Spaulding 50
Ambassador 36	Civic Center..... 5	Fielding 44	King George..... 47	New Dalt..... 37	Regent 41	Stewart 48
Auditorium 5	Clark 24	Franciscan 45	Lankershim 57	New Olympic..... 23	Roosevelt 25	Sutter 62
Barclay 52	Clift 34	Gaylord 18	La Salle..... 7	Opera House..... 5	St. Francis..... 46	Utica 2
Bellevue 20	Commodore 14	Golden State..... 56	Lombard 3	Ormond 11	Senate 8	Vanderbilt 35
Californian 21	Drake-Wiltshire 60	Gotham 1	Manx 51	Oxford 38	Senator 10	Veterans' Building.. 5
Canterbury 17	El Cortez..... 19	Governor 26	Mark Hopkins..... 40	Paisley 33	Shaw 28	Virginia 49
Carlton 6	Embassy 4	Grand 27	Mark Twain..... 22	Palace 63	Sir Francis Drake.. 54	War Memorial..... 5
Cartwright 42	Empire 12	Herald 16	Maryland 31	Pickwick 59	Somerton 32	Washington 61
Cecil 30	Fairmont 39	Herbert's 53				Whitcomb 13

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SAN FRANCISCO HOTELS

A list of San Francisco hotels is presented for the benefit of those who expect to attend the annual session of the American Medical Association, June 13-17. Dr. F. C. Warnshuis is chairman of the Subcommittee on Hotels of the local Committee on Arrangements and may be addressed at Suite 2004, 450 Sutter Street, San Francisco, Calif. The advertising announcement and coupon for reservations appear on advertising page 90 of this issue. It is quite probable that no further reservations can be accepted by some of the hotels named in the list, but the chairman of the subcommittee on hotels will use his utmost endeavor to secure satisfactory accommodations for all who may apply. Since all reservations are cleared through the subcommittee on hotels, it will greatly expedite matters if requests for reservations are addressed directly to Dr. Warnshuis at the address given.

Schedule of Rates—All Rooms with Bath

Hotels	For 1 Person	For 2 Persons—Double Bed	For 2 Persons—Twin Beds	Suites
ALEXANDER HAMILTON, 631 O'Farrell Street	$5.00	$6.00-$ 7.00	$6.00-$ 7.00	
AMBASSADOR, Mason and Eddy Streets	2.50	2.50	3.50	$ 5.00-$ 6.00
BARCLAY, 235 O'Farrell Street	2.50	3.00		
BELLEVUE, 505 Geary Street	3.50	4.50	6.00	8.00- 10.00
CALIFORNIAN, Taylor and O'Farrell Streets	3.00	4.00- 4.50	4.50- 5.00	
CANTERBURY, 750 Sutter Street	3.50	4.50	4.50- 6.00	
CARLTON, 1075 Sutter Street		3.00		
CARTWRIGHT, 524 Sutter Street	2.00- 2.50	3.00- 3.50	4.00	6.00- 7.00
CECIL, 545 Post Street	2.00- 3.00	3.00- 4.00	4.00- 4.50	7.00- 7.50
CHANCELLOR, 433 Powell Street		5.00	6.00	
CLARK, 217 Eddy Street	2.50- 3.00	3.50- 4.50	4.50- 5.50	5.50- 6.50
CLIFT, Geary and Taylor Streets	4.00- 5.00		6.00- 8.00	
COMMODORE, 825 Sutter Street	3.00- 4.00	4.00- 5.00	5.00- 6.00	
DRAKE-WILTSHIRE, 340 Stockton Street	3.50	5.00	6.00	
EL CORTEZ, 550 Geary Street	3.50	5.00- 6.00	5.00- 8.00	12.00- 15.00
EMBASSY, 610 Polk Street	2.50	3.00	3.50	
EMPIRE (formerly William Taylor), Leavenworth and McAllister Streets	3.50- 4.00	4.00- 5.00	5.00- 7.00	6.00- 16.00
FAIRMONT, California and Mason Streets	3.50- 7.00	5.00- 10.00	5.50- 10.00	14.00- 22.00
FEDERAL, 1087 Market Street	3.50		4.00	
FIELDING, 386 Geary Street		5.00		
FRANCISCAN, 350 Geary Street	3.00	3.50- 4.00	4.00	4.00- 6.00
GAYLORD, 620 Jones Street	3.00	4.00- 4.50	5.10	7.00- 8.00
GOLDEN STATE, Powell and Ellis Streets	2.50	3.50- 4.00	4.50- 6.00	5.00- 6.00
GOTHAM, 835 Turk Street	3.50		4.50- 5.00	7.00
GOVERNOR, 180 Turk Street	3.50	4.00		
GRAND, 57 Taylor Street	3.50	4.50	5.00	
HERALD, Eddy and Jones Streets	5.00	7.00		
HERBERT'S, 161 Powell Street	3.50		4.50- 5.00	
KEYSTONE, 54 Fourth Street	3.50			
KING GEORGE, 334 Mason Street	3.50	4.50	6.50	
LANKERSHIM, 55 Fifth Street	2.50- 3.50	3.00- 4.00	3.50- 4.50	6.00- 8.00
LA SALLE, 225 Hyde Street	3.50			
LOMBARD, 1015 Geary Street	2.50	3.00		
MANX, Powell and O'Farrell Streets	3.00- 4.00	4.00- 5.00	4.50- 5.50	7.00- 8.00
MARK HOPKINS, California and Mason Streets	5.00- 8.00	7.00- 12.00	7.00- 12.00	15.00- 25.00
MARK TWAIN, 345 Taylor Street	2.00	3.00	3.50	6.00
MARYLAND, 490 Geary Street	3.00	4.00	4.50	6.00
MAURICE, 761 Post Street	3.50	5.00	6.00	
NEW DALT, 34 Turk Street		3.00- 6.00		
NEW OLYMPIC, 230 Eddy Street	3.50	5.00	6.00	
ORMOND, 440 Eddy Street	2.00	3.00		5.00
OXFORD, Market and Mason Streets	2.50- 3.00	3.00- 3.50	4.00	5.00- 7.00
PAISLEY, 432 Geary Street		3.00		
PALACE, Market and New Montgomery Streets	3.50- 6.00	5.00- 7.00	6.00- 8.00	12.00- 20.00
PICKWICK, Fifth Street at Mission	3.00	4.00	5.00	
PLAZA, Post and Stockton Streets	3.00	4.00- 4.50	4.50- 5.00	
REGENT, 562 Sutter Street	2.50	3.00- 3.50	4.00	5.00- 6.00
ROOSEVELT, 240 Jones Street	2.00	3.00		
ST. FRANCIS, Powell and Geary Streets	4.00- 7.00	6.00- 9.00	7.00- 14.00	15.00- 25.00
SENATE, 467 Turk Street		3.00		
SENATOR, 519 Ellis Street	2.50	4.00	4.50	
SHAW, McAllister and Market Streets	3.00- 3.50	4.00- 5.00	4.50- 5.00	10.00
SIR FRANCIS DRAKE, Sutter and Powell Streets	3.50- 7.00	5.00- 9.00	6.00- 10.00	12.00- 20.00
SOMERTON, 440 Geary Street	3.00- 4.00		3.50- 4.00	4.50- 5.00
SPAULDING, 240 O'Farrell Street	2.00	2.50	3.00	
STEWART, 353 Geary Street	2.50- 3.50	4.00- 6.00	4.00- 6.00	7.50- 10.00
SUTTER, Sutter and Kearney Streets	2.00- 2.50	3.00- 3.50	3.50- 4.50	5.00- 6.00
UTICA, 333 Fulton Street	2.50- 3.00	3.00- 3.50	4.00- 5.00	
VANDERBILT, 221 Mason Street		3.00		
VIRGINIA, 312 Mason Street	2.50	3.50	6.00	
WASHINGTON, Grant Avenue and Bush Street	4.00- 5.00	4.00- 5.00		6.00
WHITCOMB, 1231 Market Street	3.00- 4.00	4.00- 5.00	4.00- 6.00	8.00- 16.00
WILLIAM TAYLOR (now Empire), Leavenworth and McAllister Streets	3.50- 4.00	4.00- 5.00	5.00- 7.00	6.00- 16.00

Fellows who intend to remain in San Francisco for the Rotary Convention to be held the week following the annual session of the American Medical Association must obtain an extension of their hotel reservations through their local rotary clubs.

MEETING PLACES

HOUSE OF DELEGATES: Empire Room of the Hotel Sir Francis Drake, Sutter and Powell streets.

OPENING GENERAL MEETING: Opera House, Civic Center.

GENERAL SCIENTIFIC MEETINGS: Opera House and Auditorium of Veterans' Building, Civic Center.

SECTIONS OF SCIENTIFIC ASSEMBLY

PRACTICE OF MEDICINE: Opera House, Civic Center.

SURGERY, GENERAL AND ABDOMINAL: Auditorium of Veterans' Building, Civic Center.

OBSTETRICS AND GYNECOLOGY: Auditorium of Veterans' Building, Civic Center.

OPHTHALMOLOGY: Room 223, Veterans' Building, Civic Center.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY: Room 223, Veterans' Building, Civic Center.

PEDIATRICS: Opera House, Civic Center.

PHARMACOLOGY AND THERAPEUTICS: Room 1, Veterans' Building, Civic Center.

PATHOLOGY AND PHYSIOLOGY: Room 1, Veterans' Building, Civic Center.

NERVOUS AND MENTAL DISEASES: Assembly Hall, Empire Hotel, Leavenworth and McAllister streets.

DERMATOLOGY AND SYPHILOLOGY: Auditorium A, Empire Hotel, Leavenworth and McAllister streets.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH: City Health Building, Civic Center.

UROLOGY: Auditorium A, Empire Hotel, Leavenworth and McAllister streets.

ORTHOPEDIC SURGERY: Assembly Hall, Empire Hotel, Leavenworth and McAllister streets.

GASTRO-ENTEROLOGY AND PROCTOLOGY: City Health Building, Civic Center.

RADIOLOGY: Loge of Opera House, Civic Center.

GENERAL HEADQUARTERS, SCIENTIFIC EXHIBIT, REGISTRATION BUREAU, TECHNICAL EXHIBITS, INFORMATION BUREAU AND BRANCH POSTOFFICE: Civic Auditorium in Civic Center, on Grove Street between Polk and Larkin streets.

GENERAL SCIENTIFIC MEETINGS

MONDAY, JUNE 13

OPERA HOUSE, CIVIC CENTER

2:00 p. m. Animal Experimentation in Medicine.
A. J. CARLSON, Chicago

2:30 p. m. Antepartum Care. OTTO H. SCHWARZ, St. Louis

3:00 p. m. The Ophthalmoscopic Signs of Constitutional Disease. ARTHUR J. BEDELL, Albany, N. Y.

3:30 p. m. Mental Hygiene as Related to the Psychoneuroses.
W. E. GARDNER, Louisville, Ky.

4:00 p. m. The Relation of Photography to Medicine.
RALPH P. CREER, Hines, Ill.

TUESDAY, JUNE 14

MEDICAL DIVISION: OPERA HOUSE, CIVIC CENTER

9:30 a. m. The Newer Concepts of Intestinal Infection.
JOSEPH FELSEN, New York

10:00 a. m. Experimental Investigations on the Influence of Hypoglycemia on the Central Nervous System and Their Significance for the Treatment of Schizophrenia. ERNST GELLHORN, Chicago

10:30 a. m. The Newer Knowledge of the Sensitivity Reactions of the Blood and Bone Marrow to Certain Drugs. THOMAS FITZ-HUGH JR., Philadelphia

11:00 a. m. The Prognosis in Syphilis.
HUGH J. MORGAN, Nashville, Tenn.

11:30 a. m. Eczema: Its Practical Management.
FRED WISE, New York

2:00 p.m. The Advances in the Treatment of Tuberculosis Under the Guidance of Organized Medicine.
FRANK W. BURGE, Philadelphia

2:30 p. m. Fever Therapy of Syphilis: A Comparative Evaluation of the Various Methods of Treatment.
Cooperative Clinical Group: PAUL A. O'LEARY, Chairman, Rochester, Minn.; WALTER L. BRUETSCH, Indianapolis; FRANKLIN G. EBAUGH, Denver; WALTER M. SIMPSON, Dayton, Ohio; HARRY C. SOLOMON, Boston; STAFFORD L. WARREN, Rochester, N. Y.

3:00 p. m. Intrathoracic Hodgkin's Disease as a Diagnostic and Therapeutic Problem.
CHARLES B. WRIGHT, Minneapolis

3:30 p. m. The Office Management of Bright's Disease.
THOMAS ADDIS, San Francisco

TUESDAY, JUNE 14

SURGICAL DIVISION: AUDITORIUM OF VETERANS' BUILDING, CIVIC CENTER

9:30 a. m. Gastric Hemorrhage.
DAMON B. PFEIFFER, Philadelphia

10:00 a. m. Rational Consideration of Peripheral Vascular Disease Based on Physiologic Principles.
ALTON OCHSNER and MICHAEL E. DEBAKEY, New Orleans

10:30 a. m. Cystic Mastitis and Its Treatment.
DEAN LEWIS, Baltimore

11:00 a. m. A Program for Early Aggressive Treatment in Pulmonary Tuberculosis.
CASPER F. HEGNER, Denver

11:30 a. m. Evaluation of the Injection Treatment of Hernia: A Statistical and Analytic Study Based on Four Years' Experience with Follow-Up Studies of Four Hundred Cases.
FRANKLIN I. HARRIS and A. S. WHITE, San Francisco

2:00 p. m. The Diagnosis and Treatment of Wounds of the Heart. DAN C. ELKIN, Atlanta, Ga.

2:30 p. m. Five Years' Experience with Meningiomas of the Brain. GILBERT HORRAX, Boston

3:00 p. m. The Problem of Diagnosis and Treatment of Prostatism. FRANK HINMAN, San Francisco

3:30 p. m. Cancer of the Cervix Uteri: Its Early Recognition and Manifestations.
KARL H. MARTZLOFF, Portland, Ore.

4:00 p. m. Lesions of the Biliary Tract.
WALTMAN WALTERS, Rochester, Minn.

SYMPOSIUM ON HEALTH PROBLEMS IN EDUCATION

A second Symposium on Health Problems in Education, under the sponsorship of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, together with the Section on Pediatrics, the Section on Preventive and Industrial Medicine and Public Health, the Section on Ophthalmology and the Section on Laryngology, Otology and Rhinology of the American Medical Association, will be held in the City Health Building, Civic Center, San Francisco, June 14, at 2 p. m. Dr. Robert T. Legge, Berkeley, Calif., will preside. The following program will be presented:

Looking Backward in School Health.
THOMAS D. WOOD, New York

Relationships of Health Service in the Schools to Health Education and the General Curriculum.
EDNA W. BAILEY, Berkeley, Calif.

Discussion to be opened by HAROLD H. MITCHELL, Astoria, N. Y., and W. H. ORION, Sacramento, Calif.

The Physician's Contribution to Education:
The Educator's Point of View.
GEORGE A. RICE, Oakland, Calif.

The School Physician's Point of View.
ARTHUR E. WADE, Seattle.

The Practicing Physician's Point of View.
BURT R. SHURLY, Detroit.

Better Vision for School Children.
C. S. O'BRIEN, Iowa City.

Discussion to be opened by WILLIAM H. CRISP, Denver.

Qualifications for Teaching Health.
THOMAS A. STOREY, Stanford University, Calif.

Discussion to be opened by WILLIAM P. SHEPARD, San Francisco.

How Shall Sex Be Taught in the Schools?
THURMAN B. RICE, Indianapolis.

Discussion to be opened by ROSWELL H. JOHNSON, Los Angeles.

Audiometers and Their Place in the School Program.
I. H. JONES and VERN O. KNUDSEN, Los Angeles.

Discussion to be opened by AUSTIN A. HAYDEN, Chicago.

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LOCAL COMMITTEE ON ARRANGEMENTS

Executive Committee

HOWARD MORROW, San Francisco, Chairman
ALANSON WEEKS, San Francisco, Treasurer
JUNIUS B. HARRIS, Sacramento
GEORGE G. REINLE, Oakland
J. C. GEIGER, San Francisco
L. R. CHANDLER, San Francisco
FREDERICK C. WARNSHUIS, San Francisco, Secretary

Subcommittees

Subcommittee on Sections and Section Work:

Practice of Medicine: Thomas J. Lennon, Chairman; H. G. MacLean of Oakland, DeWitt K. Burnham, Kenneth D. Gardner, Clayton D. Mote.

Surgery, General and Abdominal: A. R. Kilgore, Chairman; Edmund W. Butler, Robertson Ward, G. D. Delprat, H. Brodie Stephens, Henry H. Searls, W. W. Washburn.

Obstetrics and Gynecology: Philip H. Arnot, Chairman; T. Henshaw Kelly, A. M. Vollmer, C. A. De Puy of Oakland, Karl L. Schaupp.

Ophthalmology: Otto Barkan, Chairman; F. C. Cordes, A. E. Edgerton, Wilber F. Swett.

Dermatology and Syphilology: John M. Graves, Chairman; C. J. Lunsford and F. G. Novy of Oakland.

Preventive and Industrial Medicine and Public Health: J. C. Geiger; Walter M. Dickie and Robert T. Legge of Berkeley.

Urology: Clark M. Johnson, Chairman; Sidney Olsen, Lloyd R. Reynolds.

Orthopedic Surgery: H. H. Hitchcock of Oakland, Chairman; F. C. Bost, W. J. Cox, John J. Loutzenheiser.

Gastro-Enterology and Proctology: Fred H. Kruse, Chairman; Dudley A. Smith, Montague S. Woolf, Walter W. Boardman, M. Felix Cunha, Edward W. Hanlon, J. W. Morgan.

Radiology: H. E. Ruggles, Chairman; R. R. Newell, I. S. Ingber, Carl Benson Bowen of Oakland, Lloyd Bryan.

Subcommittee on Registration: S. P. Lucia, Chairman; Richard D. Friedlander, Edgar J. Munter, L. H. Garland, N. N. Epstein, G. Dan Delprat.

Subcommittee on Technical Exhibits: T. L. Althausen.

Subcommittee on Scientific Exhibit: Stanley Mentzer, Chairman; Howard B. Dixon, Willard E. Kay, Ernst Gehrels.

THE U. S. FLEET IN SAN FRANCISCO BAY AT NIGHT

Laryngology, Otology and Rhinology: R. C. Martin, Chairman; Rea E. Ashley, Lewis F. Morrison, George McClure of Oakland.

Pediatrics: E. B. Shaw, Chairman; George D. Lyman, Francis Scott Smyth.

Pharmacology and Therapeutics: Chauncey D. Leake, Chairman; P. J. Hanzlik, Maurice L. Tainter.

Pathology and Physiology: A. M. Moody, Chairman; J. L. Carr, J. F. Rinehart, William Dock, P. P. E. Michael of Oakland.

Nervous and Mental Diseases: Edward W. Twitchell, Chairman; George S. Johnson, P. A. Gliebe.

Subcommittee on Hotels: Frederick C. Warnshuis, Chairman.

Subcommittee on Printing and Badges: Frederick C. Warnshuis.

Subcommittee on Publicity: J. C. Geiger, Chairman; E. M. Pallette of Los Angeles, Karl L. Schaupp.

Subcommittee on Finance: Alanson Weeks, Chairman; Langley Porter, W. P. Shepard, C. A. Dukes of Oakland, Chauncey D. Leake.

Subcommittee on Women Physicians: Alice F. Maxwell, Chairman; Dorothy W. Atkinson, Mary E. Mathes, Lois Brock Watson, Huldah E. Thelander, Alice C. Bepler.

Subcommittee on Hospitals and Clinics: W. E. Carter, Chairman; C. A. Walker, Howard H. Johnson.

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Subcommittee on Transportation, Taxis and Tours: Laurence R. Taussig, Chairman; Carl L. Hoag, Harold A. Fletcher, George H. Becker.

Subcommittee on Entertainment: W. D. Horner, Chairman; W. W. Washburn, Garnett Cheney, Everett Carlson, Stacy R. Mettier, Edwin L. Bruck, Philip H. Arnot.

Opening General Session: William J. Kerr, Chairman; LeRoy H. Briggs, Arthur L. Bloomfield, Morton R. Gibbons, H. C. Moffitt.

President's Reception and Ball: H. C. Shepardson, Chairman; Hans Barkan, D. K. Pischel, Frederick L. Reichert, Edmund W. Butler, George K. Rhodes, Philip H. Arnot, Robertson Ward, W. D. Horner, Howard W. Fleming, Wilber F. Swett, Francis S. Smyth, Stacy R. Mettier, Edwin L. Bruck.

Invited Guests: Clarence G. Toland of Los Angeles, Chairman; George H. Kress and E. M. Pallette of Los Angeles, Junius B. Harris of Sacramento, W. W. Roblee of Riverside, John H. Graves.

Alumni and Fraternity Banquets: Rea E. Ashley, Chairman; John W. Cline, William G. Donald of Berkeley, Joseph W. Crawford.

Golf: James W. Morgan, Chairman; George McClure of Oakland, Ernest D. Chipman, George A. Gray of San Jose, W. G. Moore, Joseph L. McCool.

Women's Entertainment: Mrs. George Becker, Mrs. Chauncey Leake, Mrs. Edmund Morrissey, Mrs. Lewis Morrison, Mrs. Jesse Carr, Mrs. Howard Fleming.

Woman's Auxiliary: Mrs. J. C. Geiger, Chairman; Mrs. John Humber, Mrs. Hobard Rogers of Oakland.

ENTERTAINMENT

Dinner for Delegates

A dinner and entertainment is being arranged for Monday, June 13, 7 p. m., in the Rose and Concert rooms of the Palace Hotel for members of the House of Delegates of the American Medical Association.

Luncheon for Delegates

A luncheon for the officers and the members of the House of Delegates of the American Medical Association is being planned for Tuesday noon, June 14, between the morning and afternoon sessions of the House of Delegates at the Hotel Sir Francis Drake.

Alumni and Group Dinners

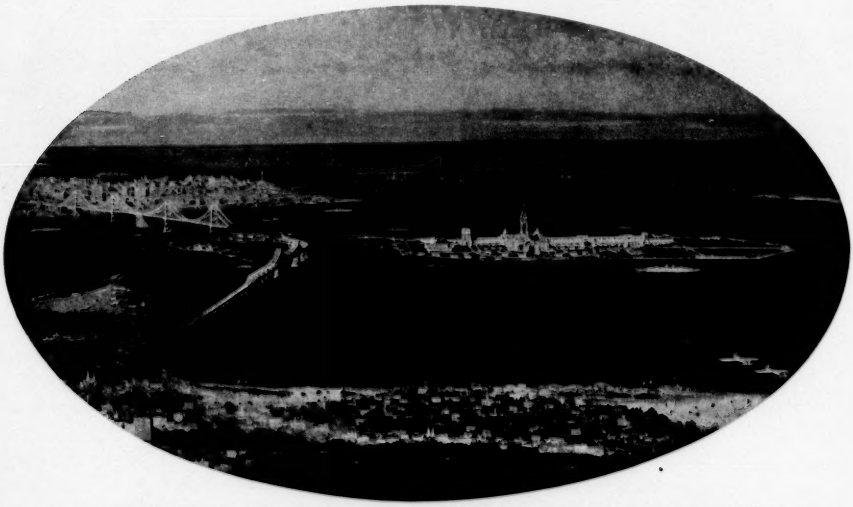
Notice has been received of the following alumni and group dinners to be held during the time of the session:

ALPHA OMEGA ALPHA, Thursday, June 16, 6 p. m., in the French Parlor of the Palace Hotel. Dr. George Dock will deliver an address.

AMERICAN COLLEGE OF RADIOLOGY, Wednesday, June 15, 7 p. m., in Parlor I of the Hotel St. Francis.

AMERICAN HEART ASSOCIATION, Friday, June 10, 7 p. m., in the Empire Room of the Hotel Sir Francis Drake.

ASSOCIATION FOR THE STUDY OF ALLERGY, Saturday, June 11, 7 p. m., in the Assembly Room of the Empire Hotel.



THE TWO NEW BRIDGES AND SAN FRANCISCO'S TREASURE ISLAND, 400-ACRE SITE OF THE 1939 INTERNATIONAL EXPOSITION

Opening General Meeting

The Opening General Meeting will be held on Tuesday evening, June 14, in the Opera House in Civic Center. The program will begin at 8 o'clock.

President's Reception and Ball

The President of the American Medical Association will be honored with a reception and ball to be held Thursday evening, June 16, at 9 o'clock at the Palace Hotel.

ASSOCIATION FOR THE STUDY OF INTERNAL SECRETIONS, Monday, June 13, 7 p. m., in the Colonial Room of the Hotel St. Francis.

CREIGHTON UNIVERSITY ALUMNI, Wednesday, June 15, 7 p. m., in the Room of the Dons of the Mark Hopkins Hotel.

HARVARD UNIVERSITY ALUMNI, Wednesday, June 15, 7 p. m., in the Gold Ball Room of the Palace Hotel.

RUSH MEDICAL COLLEGE, University of Chicago, Wednesday, June 15, 7 p. m., in the California Room of the Palace Hotel.

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SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY, Wednesday, June 15, 7 p. m., at the Hotel St. Francis.

SECTION ON NERVOUS AND MENTAL DISEASES, Wednesday, June 15, at Louis' Fashion Restaurant.

STANFORD UNIVERSITY ALUMNI, Wednesday, June 15, 7 p. m., in the Roof Lounge of the Clift Hotel.

UNIVERSITY OF LOUISVILLE ALUMNI, Wednesday, June 15, 7 p. m., in Room D of the Clift Hotel.

UNIVERSITY OF MICHIGAN ALUMNI, Wednesday, June 15, 7 p. m., in the French Parlor of the Palace Hotel.

UNIVERSITY OF SOUTHERN CALIFORNIA ALUMNI, Wednesday, June 15, 7 p. m., in Room 210 of the Hotel St. Francis. Reservations may be made with Dr. Harold R. Witherbee, 3780 Wilshire Boulevard, Los Angeles.

WOMEN PHYSICIANS, Thursday, June 16, 7 p. m., in the Room of the Dons of the Mark Hopkins Hotel.

Fraternity and Club Luncheons

Notice has been received of the following fraternity and club luncheons:

ALPHA KAPPA KAPPA FRATERNITY, Wednesday, June 15, 12 m., in Room D of the Clift Hotel.

ALPHA MU PI OMEGA MEDICAL FRATERNITY, Wednesday, June 15, 12:30 p. m., at the Hotel St. Francis.

AMERICAN COMMITTEE ON MATERNAL WELFARE, Wednesday, June 15, 12 m., in the Borgia Room of the Hotel St. Francis. Reservations may be made through the office of the committee at 650 Rush Street, Chicago.

NORTHWEST MEDICINE, Wednesday, June 15, 12:30 p. m., in Room 1 of the Empire Hotel.

POSTGRADUATE INSTRUCTIONS, Wednesday, June 15, 12:30 p. m., in Room 220 of the Hotel St. Francis.

THE ALUMNI OF THE NEW YORK EYE AND EAR INFIRMARY, Thursday, June 16, 1 p. m., at the Mark Hopkins Hotel.

THE ASSOCIATED DIPLOMATES OF THE NATIONAL BOARD OF MEDICAL EXAMINERS, Wednesday, June 15, 12:30 p. m., at the Palace Hotel.

Sailing on San Francisco Bay

Fellows interested in sailing on San Francisco Bay during the annual session may do so if they will write to Dr. Edwin L. Bruck, 384 Post Street, San Francisco.

Visit to San Quentin Prison

Fellows desiring to visit San Quentin Prison, which is located about twenty-five miles north of San Francisco, are requested to get in touch with Dr. Laurence R. Taussig, 384 Post Street, San Francisco.

Navy Hospital Ship "Relief"

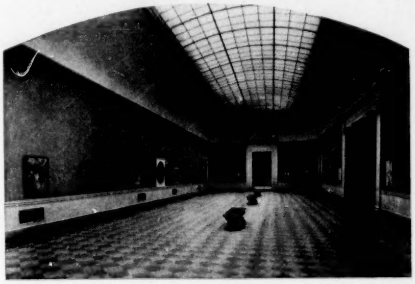
The Surgeon General of the Navy has arranged to have the Navy Hospital Ship *Relief* at anchor during the entire week of the annual session of the American Medical Association. Visiting hours will be from 10 a. m. to 4 p. m. daily and pier location will be announced in the *Daily Bulletin*.

View of City

The Pacific Telephone and Telegraph Company extends a cordial invitation to view the city of San Francisco and the bay region from the roof of the Telephone Building at 140 New Montgomery Street, which will be open daily except Saturday and Sunday, between the hours of 9 a. m. and 4:30 p. m. An invitation is also extended by the company to members, when touring Chinatown, to visit the China Central Office at 743 Washington Street.

American Physicians' Art Association

An exhibit of art pieces made by the members of the American Physicians' Art Association will be held in the San Francisco Museum of Art in the Veterans' Building in Civic Center. There will be daily luncheons, June 13 to 18, at which brief addresses will be made, at the Maison Paul, one block from Civic Center.



SAN FRANCISCO MUSEUM OF ART IN VETERANS' BUILDING

Members of the Association are invited to the exhibit and are requested to write Dr. Francis H. Redewill, Secretary of the the American Physicians' Art Association, 521 Flood Building, San Francisco, for further information.

Entertainment for Visiting Ladies

A boat ride on the bay is being arranged for Tuesday afternoon, June 14, and a bus tour of the city and bridges for Wednesday afternoon, June 15.

At 7 p. m. on Wednesday, June 15, there will be a Chinese dinner in Chinatown with the American Medical Women's Association.

On Thursday, June 16, 7 p. m., preceding the President's Reception and Ball, there will be a banquet at the Mark Hopkins Hotel.

WOMAN'S AUXILIARY

The headquarters of the Woman's Auxiliary will be located in the Fairmont Hotel. Auxiliary visitors are requested to register immediately on arrival in San Francisco.

San Francisco welcomes you and hopes that your visit here will be a most enjoyable one. Do not fail to visit the exhibits in the Tapestry Room. They present a vital picture of the work being done by county, state and national auxiliaries. Please make reservations and purchase tickets for all functions immediately on arrival at the hotel at the ticket and information desks in the lobby.

SUNDAY, JUNE 12

Reception on arrival of guests in hotel lobby. Registration, 10 a. m. to 4 p. m.

MONDAY, JUNE 13

Registration, 9 a. m. to 5 p. m.

10:00 a. m. National Board Meeting, Empire Room.

12:30 p. m. Informal Luncheon for board members. Grey Room. Fee $1.55, including tax.

2:00 p. m. National Board Meeting, Green Room.

1. Choice of sight-seeing trips. Leave from Fairmont Hotel.
   (*a*) Over the San Francisco-Oakland Bay Bridge to the University of California. Complimentary tea at the International House. Hostesses, Alameda County Woman's Auxiliary. Fee $1.85.

(*b*) Tour of city of San Francisco through Golden Gate Park, Japanese Tea Garden, Fleishhacker Pool and the Zoo, along shores of Pacific Ocean, Cliff House, Presidio, along Marina to Fisherman's Wharf; then through Chinatown. Fee $1.50.

2. (*a*) Golf. Medal round.
(*b*) Tennis, horseback riding and swimming.

JUNIUS B. HARRIS, M.D.
Sacramento, Calif.
Vice President of the American Medical Association, 1937-1938

7:00 p. m. Chinese dinner and trip through Chinatown, including visit to Theater and Joss House. Fee $1.55, including tax.

8:30 p. m. Trip through Chinatown. For further details ask at Information Desk.

TUESDAY, JUNE 14

Formal opening of convention, Gold Room; Mrs. Augustus S. Kech, presiding.

12:30 p. m. Boat trip and buffet luncheon. An excursion on the San Francisco Bay, including visit to Treasure Island, where a buffet luncheon will be served. Fee $1, including luncheon and admission to Fair Grounds. Leave from Pier 3, foot of Jackson Street.

8:00 p. m. Opening General Meeting of the American Medical Association, Opera House, Civic Center.

WEDNESDAY, JUNE 15

9:00 a. m. General Session, Gold Room; Mrs. Augustus S. Kech, presiding.

1:00 p. m. Auxiliary luncheon, Mrs. Augustus S. Kech, presiding. Fee $1.55, including tax. Terrace Room. Music. Speaker, Dr. Irvin Abell, President of the American Medical Association.

2:30 p. m. Conferences, Empire Room:
Hygeia Conference, Mrs. James Lester, Leader.
Program Conference, Mrs. V. E. Holcombe, Leader.
President's Conference, Mrs. C. C. Tomlinson, Leader.

Evening. Open house at the San Francisco County Medical Society's Building. This party will be complimentary to Auxiliary members. Time to be announced later. The San Francisco County Medical Society is housed in one of San Francisco's old historic homes.

THURSDAY, JUNE 16

10:00 a. m. Post Convention Executive Board Meeting, Empire Room; Mrs. C. C. Tomlinson, presiding.

10:30 a. m. Post Convention Board of Directors' Meeting; Mrs. C. C. Tomlinson, presiding.

11:00 a. m. Sight-seeing trip to Stanford University. Over Skyline Boulevard to Stanford University, visiting the chapel and home of former President Herbert Hoover. Luncheon will be served at the Allied Arts. Return trip over the Bay Shore Highway. Fee $3.50, including bus, luncheon and tax. Hostesses, Santa Clara and San Mateo County Auxiliaries.

HOWARD MORROW, M.D.
Chairman of the Local Committee on Arrangements

1:30 p. m. Across the scenic Golden Gate Bridge into Marin County, up Mount Tamalpais, stop at Muir Woods, one of California's famous Redwood Groves. Fee $2.25.

4:00 to
5:00 p. m. Musical in Exhibit Room (Tapestry Room). No fee.

7:00 p. m. Bring your Husband Dinner. Gold and Red Rooms, Fairmont Hotel. Fee, $2.60. Program to be announced later.

9:30 p. m. President's Reception and Ball. Palace Hotel.

AMERICAN MEDICAL WOMEN'S ASSOCIATION

The women physicians of Los Angeles will entertain visiting women physicians on Friday and Saturday, June 10 and 11, beginning with a buffet supper at Casa Amada at 7 p. m., June 10. The Saturday program will include a tour of the County Hospital, luncheon at the County Medical Building and a tour of major moving picture studios. The train for San Francisco will leave at 8 p. m. Dr. Vera Waegle, 649 Olive Street, Los Angeles, is hospitality chairman and will take reservations.

The headquarters of the American Medical Women's Association in San Francisco will be at the Fairmont Hotel and the general chairman of arrangements is Dr. Mary E. Mathes, 350 Post Street.

The following program has been arranged:

SUNDAY, JUNE 12

10:00 a. m. to 1:00 p. m.	Registration.
11:00 a. m.	Informal breakfast.
1:00 p. m. to 4:00 p. m.	Sight seeing tours.
2:30 p. m.	Board meeting, Dr. Mabel M. Akin, presiding.
4:00 p. m.	Tea at Dr. Arthurs' Sea Cliff Home.
7:00 p. m.	Past President's banquet in the Gold Room.

MONDAY, JUNE 13

10:00 a. m. to 2:00 p. m.	Business meetings, Dr. Mabel M. Akin, presiding.
12:30 p. m.	Luncheon in Gold Room.
7:00 p. m.	Inaugural Banquet.

TUESDAY, JUNE 14

10:00 a. m.	Board of directors meeting, Dr. Kate Karpeles, presiding.
12:30 p. m.	Luncheon in the Gold Room.
7:00 p. m.	Banquet for all women of American Medical Association in Gold Room.

WEDNESDAY, JUNE 15

7:00 p. m.	Chinese Dinner, Chinatown, San Francisco.

Visiting women are invited to stop before or after the convention at Portland, Ore. Automobile tours are planned to Mount Hood Lodge, Bonneville Dam on the Columbia River Highway, Rose Gardens and Rose Show and Medical School. Dr. Lena Kenin, 825 Medical Dental Building, Portland, Ore., is chairman of hospitality.

GOLF TOURNAMENT

The American Medical Golfing Association will hold its twenty-fourth annual tournament at the beautiful San Francisco Golf and Country Club on Monday, June 13. Members may tee off from 7:30 a. m. to 2:30 p. m.

FIFTY TROPHIES AND PRIZES

Thirty-six holes of golf will be played in competition for the fifty trophies and prizes in the nine events. Trophies will be awarded for the Association Championship, thirty-six holes gross, the Will Walter Trophy; the Association Handicap Championship, thirty-six holes net, the Detroit Trophy; the Championship Flight, First Gross, thirty-six holes, the St. Louis Trophy; the Championship Flight, First Net, thirty-six holes, the President's Trophy; the Eighteen Hole Championship, the Golden State Trophy; the Eighteen Hole Handicap Championship, the Ben Thomas Trophy; the Maturity Event, limited to Fellows over 60 years of age, the Minneapolis Trophy; the Oldguard Championship, limited to competition of past presidents, the Wendell Phillips Trophy, and the Kickers Handicap, the Atlantic City Trophy. Other events and prizes will be announced at the first tee.

FELLOWS IN EVERY STATE OF THE UNION

Dr. Walt P. Conaway of Atlantic City, N. J., is president, and Drs. E. S. Edgerton of Wichita, Kan., and George Washington Hall of Chicago are vice presidents of the A. M. G. A., which was organized in 1915 by Drs. Will Walter, Wendell Phillips and Gene Lewis and now totals 1,400 members representing every state in the Union. The living past presidents include Drs. Thomas Hubbard of Toledo, Fred Bailey of St. Louis, Edward Martin of Media, Pa., Robert Moss of LaGrange, Texas, Charlton Wallace of New York, Will Walter of Charlottesville, Va., James Eaves of Oakland, Calif., D. Chester Brown of Danbury, Conn., Samuel Childs of Denver, W. D. Shelden of Rochester, Minn., Walter Schaller of San Francisco, Edwin Zabriskie of New York, Frank A. Kelly of Detroit, John Welsh Croskey of Philadelphia, Homer K. Nicoll of Chicago, Charles Lukens of Toledo, M. M. Cullom of Nashville and W. Albert Cook of Tulsa, Okla.

DR. JAMES W. MORGAN HEADS SAN FRANCISCO GOLF COMMITTEE

The San Francisco committee is under the chairmanship of Dr. James W. Morgan, 384 Post Street, San Francisco. He will be assisted by Drs. George A. Gray, Ernest D. Chipman, William G. Moore and George McClure.

APPLICATION FOR MEMBERSHIP

All male Fellows of the American Medical Association are eligible and cordially invited to become members of the A. M. G. A. Write the Executive Secretary, William J. Burns, 2020 Olds Tower, Lansing, Mich., for an application blank. Participants in the A. M. G. A. tournament are required to furnish their home club handicap, signed by the club secretary. No handicap over 30 is allowed, except in the Kickers (Blind Bogey). Only active Fellows of the A. M. G. A. may compete for prizes. No trophy is awarded a Fellow who is absent from the annual dinner.

A MAGNIFICENT COURSE

The twenty-fourth tournament of the American Medical Golfing Association at the San Francisco Golf and Country Club promises to be a pleasant affair. The club is one of the most elaborate in the country. The A. M. G. A officers anticipate that some two hundred medical golfers from all parts of the United States will play in San Francisco on June 13.

GOLFERS' TOUR

The American Medical Golfing Association has arranged a tour including an ocean voyage from New York to New Orleans on the S. S. *Dixie*, sailing June 1. The first game of golf of the tour will be played in New Orleans June 7; other games will be played on excellent courses on the way to San Francisco with stopovers at Houston, Galveston and San Antonio, Texas, and Los Angeles. On the return trip by way of Portland, Seattle, Vancouver, Lake Louise and Banff there will be two additional games of golf, more sightseeing and a water trip on Puget Sound. Nongolfers as well as golfers and their ladies are invited to take this trip, and if time does not permit making the ocean voyage the "Golfers' Special" may be joined at New Orleans, June 7; perhaps others who will be unable to make the outgoing trip can make the return journey through the northwest, including Vancouver, Lake Louise and Banff. Further information and rates may be had from Mr. W. J. Burns, 2020 Olds Tower, Lansing, Mich.

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PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

PROGRAM OF THE OPENING GENERAL MEETING

Opera House, Civic Center

Tuesday, June 14, 8 p. m.

Music.

Call to Order by the President, J. H. J. UPHAM.

Invocation. REV. C. S. S. DUTTON.

Welcome to San Francisco:

HON. ANGELO ROSSI, Mayor of San Francisco.

WILLIAM VOORSANGER, President, San Francisco County Medical Society.

W. W. ROBLEE, President, California Medical Association.

Announcements. HOWARD MORROW, Chairman, Local Committee on Arrangements.

Music.

Introduction and Installation of President-Elect IRVIN ABELL, Louisville, Ky.

Address. IRVIN ABELL.

Music.

Presentation of Medal to Retiring President J. H. J. UPHAM. ARTHUR W. BOOTH, Chairman of the Board of Trustees.

Presentation of Distinguished Service Medal.

Music.

THE PROGRAMS OF THE SECTIONS

Outline of the Scientific Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order that will be followed in the Official Program, nor is the list complete. The Official Program will be similar to the programs issued in previous years and will contain the final program of each section with abstracts of the papers, as well as lists of committees, program of the Opening General Meeting, list of entertainments, map of San Francisco, and other information. To prevent misunderstandings and protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each Fellow on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN AUDITORIUM OF OPERA HOUSE, CIVIC CENTER

OFFICERS OF SECTION

Chairman—FRANCIS G. BLAKE, New Haven, Conn.

Vice Chairman—T. H. COFFEN, Portland, Ore.

Secretary—FRED M. SMITH, Iowa City.

Executive Committee—WILLIAM J. KERR, San Francisco; JOHN H. MUSSER, New Orleans; FRANCIS G. BLAKE, New Haven, Conn.

Wednesday, June 15—2 p. m.

Treatment of Cardiac Irregularities.
GEORGE FAHR, Minneapolis.
Discussion to be opened by HORACE M. KORNS, Iowa City, and WILLIAM J. KERR, San Francisco.

The Relation of Chronic Pulmonary Disease to Right Ventricular Hypertrophy and Cardiac Failure (Lantern Demonstration).
DONALD E. GRIGGS, NEWTON EVANS and CHARLES B. COGGIN, Los Angeles.
Discussion to be opened by ROBERT W. LAMSON and B. O. RAULSTON, Los Angeles.

The Frank Billings Lecture.
WALTER L. BIERRING, Des Moines, Iowa.

The Present Status of the Serum Therapy of Lobar Pneumonia.
M. A. BLANKENHORN, Cincinnati.

Pneumonia in Private Practice (Lantern Demonstration).
RUSSELL L. CECIL and EDGAR A. LAWRENCE, New York.
Discussion on papers of DR. BLANKENHORN and DRS. CECIL and LAWRENCE to be opened by EDWARD S. ROGERS, Albany, N. Y., and EUGENE S. KILGORE, San Francisco.

Thursday, June 16—2 p. m.

Bronchial Asthma: Its Diagnosis and Treatment (Lantern Demonstration). ALBERT H. ROWE, Oakland, Calif.
Discussion to be opened by CHARLES H. EYERMANN, St. Louis, and GEORGE PINESS, Los Angeles.

Chairman's Address (Lantern Demonstration).
FRANCIS G. BLAKE, New Haven, Conn.

The Treatment of Rheumatoid Arthritis (Lantern Demonstration).
MARTIN H. DAWSON and RALPH H. BOOTS, New York.
Discussion to be opened by ERNEST E. IRONS, Chicago.

The Outlook in Thrombo-Angiitis Obliterans (Lantern Demonstration). BAYARD T. HORTON, Rochester, Minn.
Discussion to be opened by DAVID P. BARR, St. Louis, and J. C. FLIPPIN, Charlottesville, Va.

Hypertension: A Century After Bright.
ROY W. SCOTT, Cleveland.
Discussion to be opened by T. H. COFFEN, Portland, Ore., and FRANK R. NUZUM, Santa Barbara, Calif.

Contribution of Emotional Factors to Physical Disease.
KARL A. MENNINGER, Topeka, Kan.
Discussion to be opened by EDGAR V. ALLEN, Rochester, Minn., and DWIGHT L. WILBUR, San Francisco.

Friday, June 17—2 p. m.

Election of Officers

Tinnitus (Lantern Demonstration).
DANIEL B. HAYDEN and EDWARD L. CHAINSKI, Chicago.

Acute Glomerular Nephritis with Special Reference to the Course and Prognosis: A Study of 150 Cases (Lantern Demonstration). FRANCIS D. MURPHY, Milwaukee.
Discussion to be opened by THOMAS ADDIS, San Francisco, and WILLARD J. STONE, Pasadena, Calif.

A New Interpretation of Diabetes Mellitus in Obese Middle Aged Persons: Cure by Reduction of Weight (Lantern Demonstration).
L. H. NEWBURGH and J. W. CONN, Ann Arbor, Mich.
Discussion to be opened by BERTNARD SMITH, Los Angeles, and J. W. SHERRILL, San Diego, Calif.

Treatment of Addison's Disease (Lantern Demonstration).
EDWARD H. RYNEARSON, Rochester, Minn.

The Present Status of the Treatment of Undescended Testes and Hypogonadism (Lantern Demonstration).
W. O. THOMPSON and N. J. HECKEL, Chicago.
Discussion to be opened by HANS LISSER, San Francisco, and E. KOST SHELTON, Los Angeles.

The Management of Biliary Tract Disease Associated with Disturbances in Cholesterol Metabolism: A Review of 100 Cases Treated Medically and Surgically (Lantern Demonstration).
J. RUSSELL TWISS and JAMES H. BARNARD, New York.
Discussion to be opened by ARTHUR L. BLOOMFIELD, San Francisco, and MARTIN E. REHFUSS, Philadelphia.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN AUDITORIUM OF VETERANS' BUILDING, CIVIC CENTER

OFFICERS OF SECTION

Chairman—HUGH H. TROUT, Roanoke, Va.

Vice Chairman—FREDERICK L. REICHERT, San Francisco.

Secretary—HENRY W. CAVE, New York.

Executive Committee—HOWARD M. CLUTE, Boston; ROBERT S. DINSMORE, Cleveland; HUGH H. TROUT, Roanoke, Va.

Wednesday, June 15—9 a. m.

Surgical Lesions of the Adrenal Glands (Lantern Demonstration).
WALTMAN WALTERS and EDWIN JOHN KEPLER, Rochester, Minn.

Early Recognition of Shock and Its Differentiation from Hemorrhage (Lantern Demonstration).
VIRGIL HOLLAND MOON, Philadelphia.

The Use of Free Full-Thickness Skin Graft (Lantern and Motion Picture Demonstration).
J. EASTMAN SHEEHAN, New York.

Electrolysis: The Controlling Factor in the Use of Metals in Fractures (Lantern Demonstration).
CHARLES SCOTT VENABLE, San Antonio, Texas.

Fracture of the Neck of the Femur.
MARTIN B. TINKER and MARTIN B. TINKER JR., with the collaboration of A. T. KERR and W. M. SAWDON, Ithaca, N. Y.

Cerebrocranial Injuries: Detailed Study of 1,433 Cases.
GEORGE W. SWIFT, Seattle.

Thursday, June 16—9 a. m.

Early Differential Diagnosis of Breast Tumors (Lantern and Motion Picture Demonstration).
ARTHUR CARROLL SCOTT, Temple, Texas.

Chairman's Address: Carcinoma of the Breast (Motion Picture Demonstration). HUGH H. TROUT, Roanoke, Va.

Gastroduodenostomy for Certain Duodenal Ulcers (Lantern Demonstration). HOWARD M. CLUTE, Boston.

Routine Operations versus Scientific Management of Spreading Peritonitis Complicating Acute Perforative Appendicitis (Lantern Demonstration).
JOHN OSCAR BOWER, Philadelphia.

The Use of Small Intestine Decompression in the Treatment of Intestinal Obstruction (Lantern Demonstration).
GROVER CLEVELAND PENBERTHY, CHARLES G. JOHNSTON, R. J. NOER and J. C. KENNING, Detroit.

One-Stage Combined Abdominoperineal Resection of the Rectum for Cancer (Lantern Demonstration).
FRED W. RANKIN, Lexington, Ky.

Friday, June 17—9 a. m.

Election of Officers

The Problem of Disruption of Abdominal Wounds and Post-operative Hernia (Lantern Demonstration).
ALBERT O. SINGLETON and TRUMAN G. BLOCKER JR., Galveston, Texas.

Mediastinal Infections Due to Esophageal Perforations (Lantern Demonstration).
CHARLES EATON PHILLIPS, Los Angeles.

Management of Intestinal Fistulas (Lantern and Motion Picture Demonstration).
CLAUDE FRANK DIXON, Rochester, Minn.

Surgical Aspects of Hypoglycemia Associated with Liver Damage (Lantern Demonstration).
FREDERICK A. COLLER and HOWARD C. JACKSON, Ann Arbor, Mich.

Does Ether Narcosis Protect from Anaphylactic Shock (Lantern Demonstration)?
AMOS R. KOONTZ and RICHARD T. SHACKELFORD, Baltimore.

Arteriography and Arterial Therapeutics.
REYNALDO DOS SANTOS, Lisbon, Portugal.

SECTION ON OBSTETRICS AND GYNECOLOGY

MEETS IN AUDITORIUM OF VETERANS' BUILDING, CIVIC CENTER

OFFICERS OF SECTION

Chairman—E. D. PLASS, Iowa City.
Vice Chairman—HARVEY B. MATTHEWS, Brooklyn.
Secretary—NORMAN F. MILLER, Ann Arbor, Mich.
Executive Committee—LYLE G. MCNEILE, Los Angeles; M. PIERCE RUCKER, Richmond, Va.; E. D. PLASS, Iowa City.

Wednesday, June 15—2 p. m.

The Relation Between Blood Plasma Proteins and Toxemias of Pregnancy: A Preliminary Report (Lantern Demonstration).
EVA F. DODGE, Montgomery, Ala., and THOMAS T. FROST, Winston-Salem, N. C.
Discussion to be opened by THOMAS ADDIS, San Francisco.

Toxemias of Pregnancy: Cause and Treatment (Lantern Demonstration). FRANCIS L. MCPHAIL, Great Falls, Mont.
Discussion to be opened by P. J. CARTER, New Orleans, and LYLE G. MCNEILE, Los Angeles.

Cyanosis of the Newborn and Associated Cerebral Injury (Lantern Demonstration). FREDERIC SCHREIBER, Detroit.
Discussion to be opened by C. B. COURVILLE, Los Angeles, and J. C. LITZENBERG, Minneapolis.

Study of Placental Site and Intra-Uterine Relationship by Original Method of Amniotic Sac Distention: Report of 400 Cases (Lantern Demonstration).
RICHARD TORPIN, Augusta, Ga.
Discussion to be opened by L. A. CALKINS, Kansas City, Mo., and JAMES R. REINBERGER, Memphis, Tenn.

Study of the Pelvic Joints During Pregnancy and Labor (Lantern Demonstration). DONALD J. THORP, Seattle.
Discussion to be opened by ALICE F. MAXWELL, San Francisco, and E. J. KRAHULIK, Los Angeles.

Pregnancy and Tuberculosis (Lantern Demonstration).
EMIL BOGEN and JANE SKILLEN, Olive View, Calif.
Discussion to be opened by J. C. IRWIN, Los Angeles, and E. L. KING, New Orleans.

Motion Picture: Birth of a Baby.

Thursday, June 16—2 p. m.

The Cervix Uteri in Obstetrics and Gynecology (Lantern Demonstration). JOSEPH L. BAER, Chicago.
Discussion to be opened by EDWARD A. SCHUMANN, Philadelphia, and GEORGE W. KOSMAK, New York.

Consideration of Good and Bad Results in the Treatment of Chronic Cervicitis (Lantern Demonstration).
WILLIAM T. BLACK, Memphis, Tenn.
Discussion to be opened by R. G. CRAIG, San Francisco, and H. B. MATTHEWS, Brooklyn.

The Management of Tuberculosis of the Cervix Uteri (Lantern Demonstration). DONALD C. COLLINS, Los Angeles.
Discussion to be opened by L. A. EMGE, San Francisco.

Color Photography of the Uterine Cervix (Lantern Demonstration). CHARLES EDWIN GALLOWAY, Evanston, Ill.
Discussion to be opened by JOHN VRUWINK, Los Angeles, and J. M. BRUNER, Des Moines, Iowa.

Uterine Myomectomy: Analysis of Indications and Results in 500 Cases (Lantern Demonstration).
VIRGIL S. COUNSELLER and ROBERT E. BEDARD, Rochester, Minn.
Discussion to be opened by L. C. SCHEFFEY, Philadelphia, and FRANK W. LYNCH, San Francisco.

Chairman's Address: Undergraduate Obstetric Teaching.
E. D. PLASS, Iowa City.

Friday, June 17—2 p. m.

Election of Officers

Anatomic Factors in the Pathogenesis and Treatment of Urethrocele and Cystocele (Lantern Demonstration).
ARTHUR H. CURTIS, Chicago.
Discussion to be opened by W. T. DANNREUTHER, New York, and G. D. ROYSTON, St. Louis.

Practical Deductions from the Management of 225 Cases of Infection of the Immature Vagina (Lantern Demonstration). GOODRICH C. SCHAUFFLER, Portland, Ore.
Discussion to be opened by W. O. JOHNSON, Louisville, Ky., and C. F. FLUHMANN, San Francisco.

Experimental Study of Behavior of Sulfanilamide (Lantern Demonstration).
FRED L. ADAIR, H. CLOSE HESSELTINE and LUCILE HAC, Chicago.
Discussion to be opened by H. O. CALVERY, Washington, D. C., and J. P. PRATT, Detroit.

The Action of Measured Doses of 800 Kilovolt Roentgen Rays on Carcinomas of the Uterine Cervix.
HENRY SCHMITZ, HERBERT E. SCHMITZ and JOHN FRANCIS SHEEHAN, Chicago.
Discussion to be opened by D. G. MORTON and ROBERT R. NEWELL, San Francisco.

SECTION ON OPHTHALMOLOGY

MEETS IN ROOM 223, VETERANS' BUILDING, CIVIC CENTER

OFFICERS OF SECTION

Chairman—PARKER HEATH, Detroit.
Vice Chairman—A. RAY IRVINE, Los Angeles.
Secretary—DERRICK VAIL, Cincinnati.
Executive Committee—JOHN GREEN, St. Louis; WILLIAM L. BENEDICT, Rochester, Minn.; PARKER HEATH, Detroit.

Wednesday, June 15—9 a. m.

Chairman's Address. PARKER HEATH, Detroit.

The Nature of the Filtrable Agent of Trachoma (Lantern Demonstration).
PHILLIPS THYGESON, New York, and POLK RICHARDS, Albuquerque, N. M.
Discussion to be opened by EDWIN WILLIAM SCHULTZ, Santa Clara, Calif., and HARRY S. GRADLE, Chicago.

Scleromalacia Perforans: Report of a Case Studied Clinically, Bacteriologically and Histologically (Lantern Demonstration).
FREDERICK H. VERHOEFF and MERRILL J. KING, Boston.
Discussion to be opened by FREDERICK A. KIEHLE, Portland, Ore., and SAMUEL P. OAST, New York.

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Histopathology in Amblyopia Following Tryparsamide Therapy (Lantern Demonstration). P. J. LEINFELDER, Iowa City.
Discussion to be opened by FREDERICK C. CORDES and MAX FINE, San Francisco.

Pathogenesis of Syphilitic Optic Atrophy (Lantern Demonstration). SAMUEL H. EPSTEIN, Boston.
Discussion to be opened by M. PURMAN DORMAN, Seattle, and HAROLD GIFFORD, Omaha.

Ptosis Correction by Attachment of Orbicularis Strips to Superior Rectus (Lantern Demonstration). JOHN M. WHEELER, New York.
Discussion to be opened by JOHN O. MCREYNOLDS, Dallas, Texas.

Thursday, June 16—9 a. m.

Theory and Use of Cross Cylinders. EDWARD JACKSON, Denver.
Discussion to be opened by CHARLES K. MILLS, McAlester, Okla., and WILLIAM H. CRISP, Denver.

Visual Acuity: Its Relation to Form Sense and the Application of this Relationship to Medicolegal Problems (Lantern Demonstration). ALBERT C. SNELL, Rochester, N. Y.
Discussion to be opened by D. F. HARBRIDGE, Phoenix, Ariz., and RALPH O. RYCHENER, Memphis, Tenn.

Vascular Changes in the Eyes in Experimental Hypertension (Lantern Demonstration). JOHN E. L. KEYES and HARRY GOLDBLATT, Cleveland.
Discussion to be opened by ARTHUR J. BEDELL, Albany, N. Y., and WILLIAM L. BENEDICT, Rochester, Minn.

Fusional Movements: Role of Peripheral Retinal Stimuli (Lantern Demonstration). HERMAN BURIAN, Hanover, N. H.
Discussion to be opened by AVERY M. HICKS, San Francisco, and WALTER H. FINK, Minneapolis.

Postoperative Complication of Cataract Operations (Lantern Demonstration). CONRAD BERENS and DONALD W. BOGART, New York.
Discussion to be opened by WATSON W. GAILEY JR., Bloomington, Ill., and JOSEPH L. MCCOOL, San Francisco.

Demonstration Session: Exhibition of New Instruments and Appliances

Among those demonstrating will be:

Demonstration of New Electrical Unit for Separated Retina Work. CLIFFORD B. WALKER, Los Angeles.

Operative Procedure for Shallow Chamber Type of Glaucoma (Lantern Demonstration). OTTO BARKAN, San Francisco.

Sulfanilamide Treatment of Trachoma: Preliminary Report. FRED LOE, Rosebud, S. D.

Friday, June 17—9 a. m.

Executive Session

Election of Officers

Vascular Obliteration for Various Types of Keratitis with Special Reference to the Nutrition of Corneal Epithelium (Lantern Demonstration). TRYGVE GUNDERSEN, Boston.
Discussion to be opened by ALBERT D. RUEDEMANN, Cleveland, and CHARLES A. BAHN, New Orleans.

Mixed Tumors of the Lacrimal Gland (Lantern Demonstration). THEODORE E. SANDERS, St. Louis.
Discussion to be opened by ADOLPH O. PFINGST, Louisville, Ky., and GEORGIANA DVORAK-THEOBALD, Oak Park, Ill.

Vernal Conjunctivitis (Lantern Demonstration). HAROLD F. WHALMAN, Los Angeles.
Discussion to be opened by M. N. BEIGELMAN, Los Angeles, and ALBERT N. LEMOINE, Kansas City, Mo.

Treatment Cancer of the Eyelids (Lantern Demonstration). GEORGE S. SHARP, Pasadena, Calif.
Discussion to be opened by EVERETT L. GOAR, Houston, Texas, and DOHRMANN K. PISCHEL, San Francisco.

SECTION ON LARYNGOLOGY, OTOLOGY AND RHINOLOGY

MEETS IN ROOM 223, VETERANS' BUILDING, CIVIC CENTER

OFFICERS OF SECTION

Chairman—GORDON B. NEW, Rochester, Minn.
Vice Chairman—C. COULTER CHARLTON, Atlantic City, N. J.
Secretary—LEROY A. SCHALL, Boston.
Executive Committee—RALPH A. FENTON, Portland, Ore.; ROBERT F. RIDPATH, Philadelphia; GORDON B. NEW, Rochester, Minn.

Wednesday, June 15—2 p. m.

Leprosy of the Upper Respiratory Tract (Lantern Demonstration). FORREST J. PINKERTON, Honolulu, Hawaii.
Discussion to be opened by R. W. BURLINGAME and HOWARD MORROW, San Francisco.

Recent Developments in Audiometers and Hearing Aids (Lantern Demonstration). AUSTIN A. HAYDEN, Chicago.

Audiometry in Routine Practice (Lantern Demonstration). ISAAC H. JONES and VERN O. KNUDSEN, Los Angeles.
Discussion on papers of DR. HAYDEN and DRS. JONES and KNUDSEN to be opened by WILLIAM P. WHERRY, Omaha; HORACE NEWHART, Minneapolis, and HAROLD A. FLETCHER, San Francisco.

Fungous Infections of the External Ear (Lantern Demonstration). EDWARD J. WHALEN, Hartford, Conn.
Discussion to be opened by WILLIAM D. GILL, San Antonio, Texas, and MILLARD F. ARBUCKLE, St. Louis.

Osteomas of the Fronto-Ethmoid and Mastoid Process (Lantern Demonstration). BERT E. HEMPSTEAD, Rochester, Minn.
Discussion to be opened by GEORGE H. WILLCUTT, San Rafael, Calif., and THOMAS E. CARMODY, Denver.

Thursday, June 16—2 p. m.

Chairman's Address: Benign Tumors of the Larynx; a Study of 716 Cases (Lantern Demonstration). GORDON B. NEW, Rochester, Minn.

Cancer of the Larynx: Analysis of Results of 800 Cases (Lantern Demonstration). CHEVALIER JACKSON and CHEVALIER L. JACKSON, Philadelphia.
Discussion to be opened by WAITMAN F. ZINN, Baltimore; MAX CUTLER, Chicago, and SIMON JESBERG, Los Angeles.

Deviations from the Normal Hemogram After Chilling: Clinical Significance in Infection of Upper Respiratory Tract (Lantern Demonstration). H. MARSHALL TAYLOR, Jacksonville, Fla.
Discussion to be opened by EDWARD CECIL SEWALL, San Francisco; JOHN J. SHEA, Memphis, Tenn., and BURT R. SHURLY, Detroit.

The Clinical Significance of Recent Work on Apneumohematosis (Lantern Demonstration). E. G. GALBRAITH, Toledo, Ohio.
Discussion to be opened by CHEVALIER JACKSON, Philadelphia; J. MACKENZIE BROWN, Los Angeles, and W. B. CHAMBERLIN, Cleveland.

Malignant Disease of the External Ear, with a Report of Eight Cases (Lantern Demonstration). FRANK R. SPENCER, Boulder, Colo.
Discussion to be opened by H. P. Mosher, Boston, and GORDON B. NEW, Rochester, Minn.

Benign Granuloma of the Nose (So-Called Sarcoid): Report of a Case (Lantern Demonstration). FRANK B. KISTNER and THOMAS D. ROBERTSON, Portland, Ore.
Discussion to be opened by MATTHEW N. HOSMER, San Francisco, and JOHN E. WIRTH, Seattle.

Friday, June 17—2 p. m.

Election of Officers

The Petrous Apex of the Temporal Bone and Its Relations (Lantern Demonstration). WILLIAM J. MELLINGER, Santa Barbara, Calif.
Discussion to be opened by J. PARSONS SHAEFFER, Philadelphia; OLOF LARSELL, Portland, Ore., and HENRY J. PROFANT, Santa Barbara, Calif.

Malignancy of the Nasopharynx (Lantern Demonstration). DURWIN H. BROWNELL and I. JEROME HAUSER, Ann Arbor, Mich.
Discussion to be opened by JOSEPH C. BECK, Chicago, and JOHN H. CHILDREY, San Francisco.

Surgical Pathology of Sinusitis (Lantern Demonstration). HERMAN Z. SEMENOV, Los Angeles.
Discussion to be opened by ROY F. NELSON, Oakland, Calif., and RAYMOND O. DART, San Francisco.

Cerebrospinal Rhinorrhea, with a Report of a Case Cured by Operation (Lantern Demonstration). DAVID R. HIGBEE, San Diego, Calif.
Discussion to be opened by HOWARD C. NAFFZIGER, San Francisco; WELLS P. EAGLETON, Newark, N. J., and CHESTER H. BOWERS, Los Angeles.

Atrophic Rhinitis (Lantern Demonstration). C. C. CHARLTON, Atlantic City, N. J.
Discussion to be opened by FRANK B. KISTNER, Portland, Ore., and ROBERT F. RIDPATH, Philadelphia.

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SECTION ON PEDIATRICS

MEETS IN AUDITORIUM OF OPERA HOUSE, CIVIC CENTER

OFFICERS OF SECTION

Chairman—CLIFFORD SWEET, Oakland, Calif.
Vice Chairman—EDWARD B. SHAW, San Francisco.
Secretary—ALBERT D. KAISER, Rochester, N. Y.
Executive Committee—HORTON R. CASPARIS, Nashville, Tenn.; RALPH M. TYSON, Philadelphia; CLIFFORD SWEET, Oakland, Calif.

Wednesday, June 15—9 a. m.

Chairman's Address: The Opportunities in Pediatric Practice. CLIFFORD SWEET, Oakland, Calif.

Recent Studies in Experimental Lobar Pneumonia (Lantern Demonstration). OSWALD H. ROBERTSON, Chicago.

Treatment of Pertussis (Lantern Demonstration). JAMES A. CONNER, Chicago.
Discussion to be opened by JOHN M. FRAWLEY, Fresno, Calif., and JOHN J. MILLER JR., San Francisco.

Further Observations on the Use of Sulfanilamide or Its Derivatives in the Treatment of Certain Infectious Diseases (Lantern Demonstration). PERRIN H. LONG and ELEANOR A. BLISS, Baltimore.
Discussion to be opened by FRANCIS SCOTT SMYTH, San Francisco, and THOMAS B. COOLEY, Detroit.

Diagnosis and Treatment of Urinary Infections (Lantern Demonstration). HENRY F. HELMHOLZ, Rochester, Minn.
Discussion to be opened by WILLIAM P. HERBST, Washington, D. C., and WILLIAM PALMER LUCAS, San Francisco.

Onset and Natural Progress of Allergy in Childhood (Lantern Demonstration). BRET RATNER, New York.
Discussion to be opened by MILTON B. COHEN, Cleveland.

Thursday, June 16—9 a. m.

JOINT MEETING WITH SECTION ON RADIOLOGY

Sinus Disease in Children (Lantern Demonstration). W. WALTER WASSON, Denver.

Sinus Treatment in Children (Lantern Demonstration). EDWARD C. MITCHELL, Memphis, Tenn.

Ephedrine in a Physiologic Vehicle and Lateral Head Low Posture in Treatment of the Nose and Sinuses (Lantern and Motion Picture Demonstration). SIDNEY N. PARKINSON, Oakland, Calif.
Discussion to be opened by JOHN J. SHEA, Memphis, Tenn.

Diagnosis and Treatment of Thymus Disease with X-Rays (Lantern Demonstration). CLYDE K. HASLEY, Detroit.

Experimental Phases of the Thymus Problem (Lantern and Motion Picture Demonstration). L. G. ROWNTREE and N. H. EINHORN, Philadelphia.

Thymus Problem in Children (Lantern Demonstration). A. GRAEME MITCHELL, Cincinnati.
Discussion to be opened by EDITH BOYD, Minneapolis.

Friday, June 17—9 a. m.

Election of Officers

Levels of Control in the Management of Diabetes Mellitus (Lantern Demonstration). ROBERT L. JACKSON and J. D. BOYD, Iowa City.
Discussion to be opened by IRVINE MCQUARRIE, Minneapolis, and PERCIVAL ALLEN GRAY JR., Santa Barbara, Calif.

A Criticism of Present Day Newborn Nursery Practice. MANDEL L. SPIVEK, Chicago.
Discussion to be opened by ERNEST WOLFF, San Francisco, and L. HOWARD SMITH, Portland, Ore.

Should the Tuberculosis Problem in Children be the Responsibility of the Health Officer or the Pediatrician? HORTON R. CASPARIS, Nashville, Tenn.
Discussion to be opened by FRANKLIN P. GENGENBACH, Denver, and V. W. SPICKARD, Seattle.

Allergy of Childhood, Prophylaxis, Early Diagnosis and Treatment. W. AMBROSE MCGEE, Richmond, Va.
Discussion to be opened by GEORGE PINESS, Los Angeles, and MARGARET M. NICHOLSON, Washington, D. C.

Hematologic Indexes in Normal and Anemic Infants and Children (Lantern Demonstration). KATSUJI KATO, Chicago.
Discussion to be opened by EDWIN E. OSGOOD, Portland, Ore., and RUSSELL L. HADEN, Cleveland.

Clinical Effects of Whole Adrenal Gland by Mouth (Lantern Demonstration). ORVILLE E. BARBOUR, Peoria, Ill.
Discussion to be opened by E. KOST SHELTON, Los Angeles, and HANS LISSER, San Francisco.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

MEETS IN ROOM 1, VETERANS' BUILDING, CIVIC CENTER

OFFICERS OF SECTION

Chairman—RUSSELL L. HADEN, Cleveland.
Vice Chairman—ERWIN E. NELSON, Ann Arbor, Mich.
Secretary—IRVING S. WRIGHT, New York.
Executive Committee—CHAUNCEY D. LEAKE, San Francisco; N. C. GILBERT, Chicago; RUSSELL L. HADEN, Cleveland.

Wednesday, June 15—9 a. m.

The Use of Crystalline Insulin in the Treatment of Patients with Severe Diabetes (Lantern Demonstration). SAMUEL S. ALTSHULER, Detroit.

Histone Insulin and Allied Insulin Compounds (Lantern Demonstration). PERCIVAL ALLEN GRAY JR., FRITZ EMIL BISCHOFF and W. D. SANSUM, Santa Barbara, Calif.
Discussion to be opened by H. CLARE SHEPHARDSON, San Francisco.

The Treatment of Pellagra by Means of Nicotinic Acid (Lantern Demonstration). TOM DOUGLAS SPIES and WILLIAM B. BEAN, Cincinnati, and ROBERT E. STONE, Birmingham, Ala.
Discussion to be opened by THOMAS T. MACKIE, New York.

Drugs Acting on the Autonomic Nervous System: Phenyl and Substituted Phenyl Alkylamines (Lantern Demonstration). GORDON A. ALLES, Los Angeles.
Discussion to be opened by CLINTON H. THIENES and M. H. NATHANSON, Los Angeles.

The Choice of a Sympathetic Stimulant for Treating Abnormal Circulatory States (Lantern Demonstration). M. L. TAINTER, San Francisco.
Discussion to be opened by DAVID A. RYTAND, San Francisco.

Visualization of the Pulmonary Circulation in Man by Means of Peripheral Intravenous Injection (Lantern Demonstration). GEORGE P. ROBB and ISRAEL STEINBERG, New York.
Discussion to be opened by EDGAR V. ALLEN, Rochester, Minn.

Thursday, June 16—9 a. m.

SYMPOSIUM ON BLOOD DYSCRASIAS

A Symposium on Blood Dyscrasias Is Also Being Presented on Thursday Afternoon Before the Section on Pathology and Physiology

Chairman's Address: Historical Aspects of the Use of Iron and Liver in the Treatment of Anemia. RUSSELL L. HADEN, Cleveland.

The Culture of Human Marrow as an Aid in the Evaluation of Therapeutic Agents (Lantern Demonstration). EDWIN E. OSGOOD, Portland, Ore.

The Treatment of Pathologic Hemorrhage (Lantern Demonstration). HAROLD W. JONES, Philadelphia.

The Treatment of Thrombocytopenic Purpura. NATHAN ROSENTHAL, New York.

The Treatment of Pernicious Anemia. WILLIAM P. MURPHY, Boston.

The Treatment of Iron Deficiency Anemias (Lantern Demonstration). W. M. FOWLER and ADELAIDE P. BARER, Iowa City.

Friday, June 17—9 a. m.

Election of Officers

Sodium Chloride Tolerance in Chronic Nephritis with Some Observations on Potassium and Sulfate Ions (Lantern Demonstration). M. HERBERT BARKER, Chicago.
Discussion to be opened by THOMAS ADDIS, San Francisco, and MYRON PRINZMETAL, Los Angeles.

Chronic Effects of Ingested Lead and Arsenic (Lantern Demonstration). HERBERT O. CALVERY, Washington, D. C.
Discussion to be opened by FLOYD DEEDS, San Francisco; ERWIN E. NELSON, New Orleans, and P. J. HANZLIK, San Francisco.

The Evaluation of Drugs Commonly Employed as Diagnostic Aids in Clinical Medicine. S. R. METTIER and CHAUNCEY D. LEAKE, San Francisco.
Discussion to be opened by ARTHUR L. BLOOMFIELD, San Francisco.

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The Use of Serum in the Higher Types of Pneumonia (Lantern Demonstration).
NORMAN H. PLUMMER, New York.
Discussion to be opened by RUSSELL L. CECIL, New York.
The Use of Adrenal Hormones in the Treatment of Asthenia, Asthma and Tuberculosis (Lantern Demonstration).
F. M. POTTENGER SR., Monrovia, Calif.
Further Clinical Observations on Therapeutic Effectiveness and Toxicity of Sulfanilamide and Several Related Compounds (Lantern Demonstration).
E. G. BANNICK, A. E. BROWN and F. P. FOSTER, Rochester, Minn.
Discussion to be opened by DWIGHT L. WILBUR, San Francisco, and EDWIN E. OSGOOD, Portland, Ore.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN ROOM 1, VETERANS' BUILDING, CIVIC CENTER

OFFICERS OF SECTION

Chairman—ROY R. KRACKE, Emory University, Ga.
Vice Chairman—MAURICE B. VISSCHER, Minneapolis.
Secretary—J. J. MOORE, Chicago.
Executive Committee—HENRY C. SWEANY, Chicago; W. E. GARREY, Nashville, Tenn.; ROY R. KRACKE, Emory University, Ga.

Wednesday, June 15—2 p. m.

Pathology of the Placenta, with Particular Reference to Infarcts and Their Relation to the Toxemias of Pregnancy (Lantern Demonstration).
R. A. BARTHOLOMEW, Atlanta, Ga.
Arterial Occlusions with Aseptic Necrosis of Bones (Lantern Demonstration). EDWIN F. HIRSCH, Chicago.
Ulcerative Gastritis and Residual Lesions (Lantern Demonstration). H. E. ROBERTSON, Rochester, Minn.
The Etiology and Pathogenesis of Alcoholic Cirrhosis of the Liver (Lantern Demonstration).
C. L. CONNOR, San Francisco.
Regulation of the Serum Calcium Level During Pregnancy (Lantern Demonstration).
MEYER BODANSKY, Galveston, Texas.
Studies on Hexyl Chloro-m-Cresol and Other Carbocyclic Antiseptics.
F. W. HARTMAN and VICTOR SCHELLING, Detroit.
Annual Variations in Seasonal Aspects of Mold Allergy: A Clinical and Atmospheric Study of Over Three Years (Lantern Demonstration).
SAMUEL M. FEINBERG, Chicago, and O. C. DURHAM, North Chicago, Ill.

Thursday, June 16—2 p. m.

SYMPOSIUM ON BLOOD DYSCRASIAS

A Symposium on Blood Dyscrasias Is Also Being Presented on Thursday Morning Before the Section on Pharmacology and Therapeutics
Chairman's Address: Relation of Drug Therapy to Neutropenic States. ROY R. KRACKE, Emory University, Ga.
Experimental Production of Agranulocytosis in Dogs (Lantern Demonstration). E. M. BUTT, Los Angeles.
Leukemoid Reactions (Lantern Demonstration).
FRANK J. HECK, Rochester, Minn.
Red Cell Dimensions in Familial Hemolytic Anemia with Particular Reference to Atypical Cases (Lantern Demonstration). JOSEPH M. HILL, Dallas, Texas.
The Erythrocyte in Sickle Cell Anemia (Lantern Demonstration). L. W. DIGGS, Memphis, Tenn.
A Method for Differentiation of Blood Groups A_1 and A_2 (Lantern Demonstration). ISRAEL DAVIDSOHN, Chicago.
The Gordon Test for Hodgkin's Disease: A Reaction to Eosinophils. JAMES B. MCNAUGHT, San Francisco.

Friday, June 17—2 p. m.

Election of Officers

Incidence of Primary Bronchiogenic Carcinoma.
PHILIP B. MATZ, Washington, D. C.
Primary Carcinoma of the Ureter.
PAUL A. FERRIER and ALVIN G. FOORD, Pasadena, Calif.
Solid Ovarian Tumors (Lantern Demonstration).
HARRY C. SCHMEISSER, Memphis, Tenn.
Cytology of the Skin of Mice During Application of Carcinogenic Agents, Methylcholanthrene and Cholanthrene (Lantern Demonstration).
ROBERT C. PAGE, Tuckahoe, N. Y.
X-Ray Diffraction Analysis as Applied in Pneumoconiosis (Lantern Demonstration). HENRY C. SWEANY, Chicago.
The Effects of Tuberculoprotein: A Quantitative Study (Lantern Demonstration). HARRY J. CORPER, Denver.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN ASSEMBLY HALL, EMPIRE HOTEL

OFFICERS OF SECTION

Chairman—SAMUEL D. INGHAM, Los Angeles.
Vice Chairman—GROVES B. SMITH, Godfrey, Ill.
Secretary—PAUL C. BUCY, Chicago.
Executive Committee—HANS H. F. REESE, Madison, Wis.; HENRY R. VIETS, Boston; SAMUEL D. INGHAM, Los Angeles.

Wednesday, June 15—9 a. m.

A dinner for the section will be held on Wednesday, June 15, at Louis' Fashion Restaurant.
Marriage Among the Mentally Retarded (Lantern Demonstration).
L. H. ZIEGLER, Wauwautosa, Wis., and C. P. SHELDON, Boston.
Discussion to be opened by DWIGHT L. WILBUR, San Francisco, and LAWRENCE KOLB, Lexington, Ky.
The Psychoanalytic Treatment of Chronic Alcoholic Addiction in a Sanatorium (Lantern Demonstration).
ROBERT P. KNIGHT, Topeka, Kan.
Discussion to be opened by F. G. EBAUGH, Denver.
Chairman's Address: Some Neurologic Aspects of Psychiatry.
SAMUEL D. INGHAM, Los Angeles.
A Follow-Up Report of a Human Being with Bilateral Frontal Lobectomy: Comparison with Cases of Unilateral Lobectomy (Lantern Demonstration).
RICHARD M. BRICKNER, New York.
Discussion to be opened by W. F. SCHALLER, San Francisco.

INSULIN SHOCK AND METRAZOL THERAPY

Clinical Observations and Results with Hypoglycemia and Convulsive Therapy in Schizophrenia (Lantern Demonstration). HANS H. F. REESE, Madison, Wis.
Treatment of the Psychoses with Hypoglycemia and Induced Convulsions (Lantern Demonstration).
RICHARD H. YOUNG and G. ALEXANDER YOUNG, Omaha.
Discussion to be opened by A. A. LOW, Chicago, and TITUS H. HARRIS, Galveston, Texas.

Thursday, June 16—9 a. m.

The Cerebellum: A New Interpretation (Lantern Demonstration). OLOF LARSELL, Portland, Ore.
Discussion to be opened by FREDERICK L. REICHERT and WEBB E. HAYMAKER, San Francisco.
The Present Status of a Patient Who Has Had the Right Cerebral Hemisphere Removed (Motion Picture Demonstration). K. G. MCKENZIE, Toronto, Canada.
Discussion to be opened by MAX M. PEET, Ann Arbor, Mich., and HENRY R. VIETS, Boston.

BRAIN TUMORS

Cerebral Pseudo-Tumor and Pseudo-Abscess (Lantern Demonstration). W. J. GARDNER, Cleveland.
Discussion to be opened by HARRY WILKINS, Oklahoma City, and R. B. RANEY, Los Angeles.
Intracranial Arteriovenous Varices with Brief Report of Ten Cases of Different Types and Special Reference to Treatment by Ligation (Lantern Demonstration).
R. E. SEMMES, Memphis, Tenn.
Discussion to be opened by HALE A. HAVEN, Seattle, and E. B. TOWNE, San Francisco.
Tumors of the Fourth Ventricle (Lantern Demonstration).
W. MCK. CRAIG and J. W. KERNOHAN, Rochester, Minn.
Brain Tumors in Infancy and Childhood.
D. N. BUCHANAN and PERCIVAL BAILEY, Chicago.
Discussion on papers of DRS. CRAIG and KERNOHAN and DRS. BUCHANAN and BAILEY to be opened by H. C. NAFFZIGER, San Francisco, and F. R. TEACHENOR, Kansas City, Mo.

Friday, June 17—9 a. m.

Election of Officers

Horse Serum Neuritis (Lantern and Motion Picture Demonstration). A. E. BENNETT, Omaha.
Discussion to be opened by GEORGE WILSON, Philadelphia, and WALTER FREEMAN, Washington, D. C.

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The Treatment of Acute Infections of the Central Nervous System with Sulfanilamide (Lantern Demonstration).
JOSEPHINE B. NEAL, New York.
Discussion to be opened by R. CANNON ELEY, Boston, and ARCHIBALD L. HOYNE, Chicago.

Chronic Adhesive Spinal Arachnoiditis: A Clinical and Pathologic Study (Lantern Demonstration).
R. P. MACKAY, Chicago.
Discussion to be opened by JOHN B. DOYLE and J. M. NIELSEN, Los Angeles.

Epilepsy and the Carotid Sinus (Lantern Demonstration).
WILDER G. PENFIELD and H. M. KEITH, Montreal, Canada.
Discussion to be opened by HENRY W. WOLTMAN, Rochester, Minn.

Clinical Experiences with Diphenylhydantoin: A New Anticonvulsant Drug (Lantern Demonstration).
H. H. MERRITT and T. J. PUTNAM, Boston.
Discussion to be opened by EUGENE ZISKIND, Los Angeles, and O. P. KIMBALL, Cleveland.

Results of Removal of Cerebral Cortical Scars.
WILLIAM J. GERMAN JR., New Haven, Conn.
Discussion to be opened by TEMPLE S. FAY, Philadelphia, and R. GLEN SPURLING, Louisville, Ky.

SECTION ON DERMATOLOGY AND SYPHILOLOGY

MEETS IN AUDITORIUM A, EMPIRE HOTEL

OFFICERS OF SECTION

Chairman—JOSEPH V. KLAUDER, Philadelphia.
Vice Chairman—H. J. TEMPLETON, Oakland, Calif.
Secretary—BEDFORD SHELMIRE, Dallas, Texas.
Executive Committee—HARRY R. FOERSTER, Milwaukee; PAUL A. O'LEARY, Rochester, Minn.; JOSEPH V. KLAUDER, Philadelphia.

Wednesday, June 15—9 a. m.

SYMPOSIUM ON OCCUPATIONAL DERMATOSES

Chairman's Address: Erysipeloid as an Occupational Disease.
JOSEPH V. KLAUDER, Philadelphia.

Occupational Dermatoses: An Educational Program (Lantern Demonstration).
C. GUY LANE, Boston.

Incidence of Occupational Dermatoses and Their Causes in the Basic Industries.
LOUIS SCHWARTZ, New York.

Industrial Dermatoses: Remarks on Criteria for Diagnosis and on Future Immunologic Methods of Prophylaxis (Lantern Demonstration).
MARION B. SULZBERGER, New York, and CLARK W. FINNERUD, Chicago.

The Practical Aspect of the Prevention of Industrial Dermatoses: Elimination of Hazards and Protective Methods (Lantern Demonstration).
EARL D. OSBORNE and JAMES W. JORDON, Buffalo.

Analysis of Claims in Industrial Dermatoses.
JOHN G. DOWNING, Boston.

Some Medicolegal Aspects of Industrial Dermatoses.
HARRY R. FOERSTER, Milwaukee.
Discussion on papers of Dr. LANE, DR. SCHWARTZ, DRS. SULZBERGER and FINNERUD, DRS. OSBORNE and JORDON, DR. DOWNING and DR. FOERSTER to be opened by C. C. DENNIE, Kansas City, Mo.; CLEVELAND J. WHITE, Chicago, and HIRAM E. MILLER, San Francisco.

Thursday, June 16—9 a. m.

Are There Paradoxic Serum Reactions in Syphilis (Lantern Demonstration)? REUBEN L. KAHN, Ann Arbor, Mich.
Discussion to be opened by FREDERICK G. NOVY JR., Oakland, Calif.

The Present Status of Acetarsone Therapy in Prenatal Syphilis (Lantern Demonstration).
DONALD M. PILLSBURY and H. HARRIS PERLMAN, Philadelphia.
Discussion to be opened by JOSEPH YAMPOLSKY, Atlanta, Ga.

The Treatment of Congenital Syphilis with Mapharsen.
JAMES K. HOWLES, New Orleans.
Discussion to be opened by JOHN E. RAUSCHKOLB, Cleveland.

Acetarsone Orally in the Treatment of Acquired Syphilis in Adults.
HARRY M. ROBINSON and HARRY M. ROBINSON JR., Baltimore.
Discussion to be opened by CHARLES R. REIN, New York.

High Antisyphilitic Level of Bismuth in the Blood Stream: Method of Its Rapid Achievement and of Its Prolongation (Lantern Demonstration).
TORALD H. SOLLMANN, HAROLD N. COLE, KATHARINE I. HENDERSON, GARRETT A. COOPER, W. R. LOVE and W. F. SCHWARTZ, Cleveland.
Discussion to be opened by GEORGE V. KULCHAR, San Francisco.

Neurosyphilis in the Negro: Spinal Fluid Manifestations in Untreated and Treated Cases (Lantern Demonstration).
SAMUEL GOLDBLATT, Cincinnati.
Discussion to be opened by MARQUE O. NELSON, Tulsa, Okla.

Treatment of Tabes Dorsalis: Observations on Nine Hundred Patients (Lantern Demonstration).
PAUL A. O'LEARY, Rochester, Minn.; JOSEPH EARLE MOORE, Baltimore; JOHN H. STOKES, Philadelphia; UDO J. WILE, Ann Arbor, Mich.; and THOMAS PARRAN, R. A. VONDERLEHR and LIDA J. USILTON, Washington, D. C.
Discussion to be opened by WALTER FREEMAN, Washington, D. C.

Friday, June 17—9 a. m.

Election of Officers

Hidroadenitis Suppurativa (Verneuil) (Lantern Demonstration).
HENRY A. BRUNSTING, Toledo, Ohio.
Discussion to be opened by WILLIAM H. GOECKERMAN, Los Angeles.

Tumor-like Keratoses: Case Report (Lantern Demonstration).
DUNCAN O. POTH, San Antonio, Texas.
Discussion to be opened by H. J. TEMPLETON, Oakland, Calif.

Acne Urticata Polycythemica with Positive Oxidase Reaction in Sections and in Lesions in Situ (Lantern Demonstration).
FRED D. WEIDMAN, Philadelphia.
Discussion to be opened by J. GARDNER HOPKINS, New York.

Cholesterol Studies and Low Fat Diet in Psoriasis (Lantern Demonstration).
JOHN F. MADDEN, St. Paul.
Discussion to be opened by RICHARD J. BAILEY, Spokane, Wash.

Sensitiveness of the Skin to X-Rays Following the Ingestion of Arsenic (Lantern Demonstration).
CARL W. LAYMON and HARRY A. CUMMING, Minneapolis.
Discussion to be opened by W. H. GUY, Pittsburgh.

The Toxic Skin Manifestations Following Sulfanilamide Therapy (Lantern Demonstration).
J. W. TEDDER, New Orleans.
Discussion to be opened by MARCUS R. CARO, Chicago.

SECTION ON PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

MEETS IN CITY HEALTH BUILDING, CIVIC CENTER

OFFICERS OF SECTION

Chairman—ROBERT T. LEGGE, Berkeley, Calif.
Vice Chairman—CHARLES V. CRASTER, Newark, N. J.
Secretary—I. C. RIGGIN, Richmond, Va.
Executive Committee— R. R. SAYERS, Washington, D. C.; L. D. BRISTOL, New York; ROBERT T. LEGGE, Berkeley, Calif.

Wednesday, June 15—2 p. m.

Chairman's Address: Industrial Medicine of Tomorrow.
ROBERT T. LEGGE, Berkeley, Calif.

Public Health Aspects of Industrial Hygiene.
R. R. SAYERS, Washington, D. C.
Discussion to be opened by L. D. BRISTOL, New York.

Industrial Medicine's Challenge to the Internist.
R. T. JOHNSTONE, Los Angeles.
Discussion to be opened by LEOPOLD BRAHDY, New York.

Medical Supervision of Benzene Plant Workers (Lantern Demonstration).
A. G. KAMMER, Indiana Harbor, East Chicago, Ind.
Discussion to be opened by PETER K. KNOEFEL, Louisville, Ky.

Noise and Its Injurious Effects on Human Beings (Lantern Demonstration).
CAREY P. MCCORD, Detroit.
Discussion to be opened by VERN O. KNUDSEN and NORMAN A. WATSON, Los Angeles.

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Thursday, June 16—2 p. m.

Maryland's Program for the Control of Tuberculosis.
R. H. RILEY, Baltimore.
Discussion to be opened by W. P. SHEPARD, San Francisco.

Hematogenous Tuberculosis and Silicosis (Lantern Demonstration). LOUIS COHEN, Philadelphia.
Discussion to be opened by A. J. LANZA, New York.

Studies on the Mechanism of Intranasal Infections.
CHARLES ARMSTRONG, Washington, D. C.
Discussion to be opened by EDWIN WILLIAM SCHULTZ, Stanford University, Calif.

Two and One-Half Years of Pneumonia Control in New York State (Lantern Demonstration).
EDWARD S. ROGERS, Albany, N. Y.
Discussion to be opened by PETER IRVING, New York.

Cold Vaccines: An Evaluation Based on a Controlled Study (Lantern Demonstration).
H. S. DIEHL, A. B. BAKER and DONALD W. COWAN, Minneapolis.

Recent Researches in Nutrition in Relation to Preventive Medicine (Lantern Demonstration).
NINA SIMMONDS, San Francisco.
Discussion to be opened by M. J. ROSENAU, Chapel Hill, N. C.

Friday, June 17—2 p. m.

Election of Officers

Coccidioidomycosis: The Preliminary Acute Infection with Fungus Coccidioides (Lantern Demonstration).
ERNEST C. DICKSON, San Francisco.
Discussion to be opened by K. F. MEYER, San Francisco.

Health of the Migrant. W. M. DICKIE, Berkeley, Calif.
Discussion to be opened by MYRNIE A. GIFFORD, Bakersfield, Calif.

The Next Great Battle for Soldiers of Medicine.
HENRY A. LUCE, Detroit.
Discussion to be opened by J. N. BAKER, Montgomery, Ala.

The Contribution of Mental Hygiene to Education on the Elementary Level. JAMES HOULOOSE, Long Beach, Calif.
Discussion to be opened by HERBERT R. STOLZ, Oakland, Calif.

Some Physiologic Concepts in Mental Hygiene.
FORREST N. ANDERSON, Los Angeles.

SECTION ON UROLOGY

MEETS IN AUDITORIUM A, EMPIRE HOTEL

OFFICERS OF SECTION

Chairman—ALBERT J. SCHOLL, Los Angeles.
Vice Chairman—GEORGE G. REINLE, Oakland, Calif.
Secretary—WILLIAM P. HERBST, Washington, D. C.
Executive Committee—JOHN H. MORRISSEY, New York; HENRY W. E. WALTHER, New Orleans; ALBERT J. SCHOLL, Los Angeles.

Wednesday, June 15—2 p. m.

The Treatment of Testicular Deficiency with Testosterone Propionate (Lantern Demonstration).
E. PERRY MCCULLAGH, Cleveland.

Criteria of Operability in Obstructive Lesions of the Bladder Outlet (Lantern Demonstration).
HAROLD C. HABEIN, Rochester, Minn.

The Treatment of Nongonococcic Infection of the Urinary Tract with Sulfanilamide.
ANSON L. CLARK, Oklahoma City.

Resection of the Superior Hypogastric Plexus and the Sacral Sympathetic Ganglions for the Relief of Bladder Pain (Lantern and Motion Picture Demonstration).
C. F. SCHROEDER, Wyandotte, Mich., and R. E. CUMMING, Detroit.

Advances in the Technic of Transurethral Prostatectomy (Motion Picture Demonstration).
REED M. NESBIT, Ann Arbor, Mich.

Prostatectomy or Transurethral Prostatic Resection (Lantern Demonstration)? EDWIN DAVIS, Omaha.

Vesical Diverticula (Lantern Demonstration).
ROBERT V. DAY and HARRY W. MARTIN, Los Angeles.

Thursday, June 16—2 p. m.

The Significance of Roentgenographic Studies of the Urinary Tract During and After Pregnancy (Lantern Demonstration).
STANLEY R. WOODRUFF, Jersey City, N. J., and ARTHUR H. MILBERT, New York.

Chairman's Address: Urologic Conditions Resembling Chronic Glomerulonephritis (Motion Picture Demonstration).
ALBERT J. SCHOLL, Los Angeles.

The Treatment of Gonorrhea with Sulfanilamide (Lantern Demonstration). BERNARD SILVER, Los Angeles.

Surgical Procedures in the Treatment of Complications in Gonorrhea. JOHN H. MORRISSEY, New York.

Surgical Indications in Renal Tuberculosis (Lantern Demonstration).
JOHN L. EMMETT and JOHN M. KIBLER, Rochester, Minn.

Cysts of the Kidney (Lantern Demonstration).
GEORGE W. FISH, New York.

Friday, June 17—2 p. m.

Election of Officers

Torsion of the Testicle. JOHN K. ORMOND, Detroit.

The Problem of Urinary Tract Absorption in Hydronephrosis.
DUNCAN M. MORISON, Edinburgh, Scotland.

Testicular Tumors (Lantern Demonstration).
HUGH CABOT, Rochester, Minn.

Surgery of Genito-Urinary Malignancy.
HENRY G. BUGBEE, New York.

Radiation Therapy in the Treatment of Tumors of the Urinary Tract. CLYDE K. EMERY, Los Angeles.

The Visualization of the Adrenal Glands by Air Injection (Lantern Demonstration). NORMAN W. ROOME, Chicago.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN ASSEMBLY HALL, EMPIRE HOTEL

OFFICERS OF SECTION

Chairman—JOHN DUNLOP, Pasadena, Calif.
Vice Chairman—OSCAR L. MILLER, Charlotte, N. C.
Secretary—ROBERT V. FUNSTEN, Charlottesville, Va.
Executive Committee—ARTHUR T. LEGG, Boston; FREMONT A. CHANDLER, Chicago; JOHN DUNLOP, Pasadena, Calif.

Wednesday, June 15—2 p. m.

Synovectomy of the Knee Joint for Chronic Arthritis (Lantern Demonstration). GEORGE A. L. INGE, New York.
Discussion to be opened by LORING T. SWAIM, Boston, and DAVID H. KLING, Los Angeles.

Spondylolisthesis: An Etiologic Factor in Backache (Lantern Demonstration).
HENRY W. MEYERDING, Rochester, Minn.
Discussion to be opened by SYLVAN L. HAAS, San Francisco, and CHARLES LEROY LOWMAN, Los Angeles.

Treatment of Fracture-Dislocation of the Spine Associated with Cord Injury (Lantern Demonstration).
C. C. COLEMAN, Richmond, Va., and J. M. MEREDITH, University, Va.
Discussion to be opened by FREDERIC C. BOST, San Francisco, and S. C. BALDWIN, Salt Lake City.

Fractures of the Lower End of the Humerus (Lantern Demonstration). GEORGE J. GARCEAU, Indianapolis.
Discussion to be opened by J. H. DORMAN, Dallas, Texas, and H. W. SPIERS, Los Angeles.

Fascial Adhesions in Low Back Pain and Arthritis (Lantern Demonstration). CHARLES MURRAY GRATZ, New York.
Discussion to be opened by ARTHUR STEINDLER, Iowa City, and HULETT J. WYCKOFF, Seattle.

Newer Concepts and Methods of Teaching Orthopedic Surgery (Lantern and Motion Picture Demonstration).
PHILIP LEWIN, Chicago.

Thursday, June 16—2 p. m.

Factors to be Considered in Bone Metabolism with Suggestions as to the Clinical Value of Vitamin D and Parathyroid Extract (Lantern Demonstration).
CHARLES F. NELSON, Beverly Hills, Calif.
Discussion to be opened by EDWARD L. COMPERE, Chicago, and WALTER BAUER, Boston.

Relation Between Birth Injuries and the Obstetric History (Lantern Demonstration).
STEELE F. STEWART, Los Angeles.
Discussion to be opened by OSCAR L. MILLER, Charlotte, N. C., and CHARLES E. SEVIER, Denver.

Chairman's Address: Transcondylar Fractures of the Humerus in Childhood (Lantern Demonstration).
JOHN DUNLOP, Pasadena, Calif.

The Use of Absorbable Metal in Bone Surgery (Lantern Demonstration). EARL D. MCBRIDE, Oklahoma City.
Discussion to be opened by CHARLES SCOTT VENABLE, San Antonio, Texas, and ROGER ANDERSON, Seattle.

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Dashboard Fractures of the Patella (Motion Picture Demonstration). C. FRED FERCIOT, Lincoln, Neb.
Discussion to be opened by W. B. CARRELL, Dallas, Texas, and LOUIE FELGER, Los Angeles.

Friday, June 17—2 p. m.

Election of Officers

Common Sense in the Treatment of Acute Hematogenous Osteomyelitis (Lantern Demonstration). J. ALBERT KEY, St. Louis.
Discussion to be opened by W. D. GRIESEMER, Reading, Pa., and JESSE T. NICHOLSON, Philadelphia.

A Method of Reduction of Fractured Neck of the Femur by Transtrochanteric Skeletal Traction to be Followed by Axial Fixation with Threaded Steel Pins, with a Report of Five Years' Follow Up on Transcervical Fixation (Lantern Demonstration). DAVID R. TELSON, Brooklyn.
Discussion to be opened by ROLAND HAMMOND, Providence, R. I., and LEROY C. ABBOTT, San Francisco.

Time Element in Fractures (Lantern Demonstration). BARNEY J. HEIN, Toledo, Ohio.
Discussion to be opened by DONALD C. DURMAN, Saginaw, Mich.; E. M. PORTER, Great Falls, Mont., and G. MASSER TAYLOR, Los Angeles.

Estimation of Disability After Injury (Lantern Demonstration). WALTER G. STERN, Cleveland.
Discussion to be opened by HARRY E. MOCK, Chicago; EARL D. MCBRIDE, Oklahoma City, and LIONEL D. PRINCE and HOWARD W. FLEMING, San Francisco.

The Operative Treatment of Pes Planus (Lantern Demonstration). CHARLES S. YOUNG, Los Angeles.
Discussion to be opened by REX L. DIVELEY, Kansas City, Mo., and HENRY W. WILCOX, Denver.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS IN CITY HEALTH BUILDING, CIVIC CENTER

OFFICERS OF SECTION

Chairman—HENRY L. BOCKUS, Philadelphia.
Vice Chairman—DESCUM C. MCKENNEY, Buffalo.
Secretary—A. H. AARON, Buffalo.
Executive Committee—ERNEST H. GAITHER, Baltimore; LOUIS A. BUIE, Rochester, Minn.; HENRY L. BOCKUS, Philadelphia.
The annual banquet of the section will be held on Wednesday, June 15, 7 p. m., at the Hotel St. Francis.

Wednesday, June 15—9 a. m.

Gastroenterology in the Practice of Cardiology (Lantern Demonstration). LOUIS F. BISHOP JR., New York.
Discussion to be opened by JOHN R. TWISS, New York.

The Effect of Smoking on the Activities of the Alimentary Tract (Lantern Demonstration). ANDREW C. IVY, Chicago.
Discussion to be opened by SIDNEY A. PORTIS, Chicago.

Gallbladder Infection, Its Experimental Production and Attempts at Specific Therapy.
MARTIN E. REHFUSS and GUY M. NELSON, Philadelphia.
Discussion to be opened by GARNETT CHENEY, San Francisco.

Operative Injury to the Anal Sphincter Mechanism (Lantern Demonstration). PAUL C. BLAISDELL, Pasadena, Calif.
Discussion to be opened by MALCOLM R. HILL, Los Angeles.

Proctologic Tumors: Diagnostic Difficulties and Pathologic Changes (Lantern Demonstration).
CLAUDE C. TUCKER and C. ALEXANDER HELLWIG, Wichita, Kan.
Discussion to be opened by CURTICE ROSSER, Dallas, Texas.

Recording the Movements of the Gastrointestinal Tract by Roentgen Kymography (Motion Picture Demonstration). WENDELL G. SCOTT, St. Louis.
Discussion to be opened by CHARLES W. DUDEN, St. Louis.

Medical Aspect of Cancer of the Stomach (Lantern Demonstration). SARA M. JORDAN, Boston.
Discussion to be opened by MANUEL FELIX CUNHA, San Francisco.

Gastrointestinal Symptoms in Disease of the Brain (Lantern Demonstration). HARRY GAUSS, Denver.
Discussion to be opened by EDWARD G. BILLINGS Denver.

Thursday, June 16—9 a. m.

Chairman's Address: Training of the Gastroenterologic Internist. HENRY L. BOCKUS, Philadelphia.

SYMPOSIUM ON ULCERATIVE COLITIS

The Medical Management of Chronic Ulcerative Colitis (Lantern Demonstration). THOMAS T. MACKIE, New York.

Functional or Sociologic Disorders of the Colon: Medical and Surgical Considerations (Lantern Demonstration).
ELMER G. WAKEFIELD and CHARLES W. MAYO, Rochester, Minn.

The Surgical Treatment of Ulcerative Colitis. THOMAS E. JONES, Cleveland.

Prognosis of Ulcerative Colitis (Lantern Demonstration).
JOHN H. WILLARD, Philadelphia; J. F. PESSEL, Trenton, N. J., and J. WARREN HUNDLEY, Philadelphia.
Discussion on papers of DR. MACKIE, DRS. WAKEFIELD and MAYO, DR. JONES and DRS. WILLARD, PESSEL and HUNDLEY to be opened by WILLIAM FITCH CHENEY, San Francisco; JOHN H. FITZGIBBON, Portland, Ore.; WILLIAM C. BOECK, Los Angeles, and ARTHUR L. BLOOMFIELD, San Francisco.

Studies on Treatment in Intestinal Tuberculosis (Lantern Demonstration). LEO L. HARDT and JOHN S. COULTER, Chicago.
Discussion to be opened by DESCUM C. MCKENNEY, Buffalo.

A Review of a Group of Proctologic Operations Using Spinocain as an Anesthetic (Lantern Demonstration). MARTIN S. KLECKNER, Allentown, Pa.
Discussion to be opened by DUDLEY A. SMITH, San Francisco.

Intravenous Alimentation with Special Reference to Protein (Amino Acid) Metabolism (Lantern Demonstration). ROBERT ELMAN, St. Louis.
Discussion to be opened by ANDREW C. IVY, Chicago.

Friday, June 17—9 a. m.

Election of Officers

Clinical Observations on a Group of Ulcer Cases (Lantern Demonstration). J. MCDONALD MILLIGAN, Elgin, Ill.
Discussion to be opened by GRANT H. LANPHERE, Los Angeles, and FRED H. KRUSE, San Francisco.

The Value of Roentgenologic Demonstration of the Crater in Duodenal Ulcer (Lantern Demonstration).
FREDERIC E. TEMPLETON and A. W. MARCOVICH, Chicago.
Discussion to be opened by THEODORE L. ALTHAUSEN, San Francisco.

Sex Hormones in Peptic Ulcer (Lantern Demonstration). DAVID J. SANDWEISS, Detroit.
Discussion to be opened by WARREN O. NELSON, Detroit.

Gastritis: Correlation of Gastric Analysis and Clinical Observations with Gastroscopy.
JOSEPH BANK, Phoenix, Ariz., and ROBY JOHN F. RENSHAW, Los Angeles.
Discussion to be opened by FRANK D. GORHAM, St. Louis.

Gastroscopy as Compared with Other Methods of Diagnosis in Gastric Lesions (Lantern Demonstration). ELMER B. FREEMAN, Baltimore.
Discussion to be opened by ROBY JOHN F. RENSHAW, Los Angeles.

Some Forms of Hepatitis Not Commonly Recognized (Lantern Demonstration). JAMES F. WEIR, Rochester, Minn.
Discussion to be opened by DWIGHT L. WILBUR, San Francisco.

Strongyloidosis: A Discussion of Strongyloid Infestation with Emphasis on Its Therapy. VIRGIL E. SIMPSON, Louisville, Ky.
Discussion to be opened by THOMAS T. MACKIE, New York.

Extrarectal Metastatic Growths from Upper Abdominal Malignant Neoplasms: Report of Twelve Cases (Lantern Demonstration). HARRY E. BACON, Philadelphia.
Discussion to be opened by NEWTON D. SMITH, Rochester, Minn., and W. H. DANIEL, Los Angeles.

SECTION ON RADIOLOGY

MEETS IN LOGE OF OPERA HOUSE, CIVIC CENTER

OFFICERS OF SECTION

Chairman—B. R. KIRKLIN, Rochester, Minn.
Vice Chairman—R. G. TAYLOR, Los Angeles.
Secretary—JOHN T. MURPHY, Toledo, Ohio.
Executive Committee—EDWARD L. JENKINSON, Chicago; ROSS GOLDEN, New York; B. R. KIRKLIN, Rochester, Minn.

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Wednesday, June 15—9 a. m.

The Thymus: Studies of Some Changes in the Gonads and Pituitary Following Destruction of the Thymus by Roentgen Irradiation (Lantern Demonstration).
JACOB GERSHON-COHEN, HARRY SHAY, S. S. FELS, DAVID R. MERANZE and THEODORE MERANZE, Philadelphia.

Factors Influencing the Radiosensitivity of Malignant Neoplasms of the Uterine Cervix (Lantern Demonstration).
H. H. BOWING and ROBERT E. FRICKE, Rochester, Minn.

The Irradiation of Kidney Tumors in Children (Lantern Demonstration). H. D. KERR, Iowa City.

Apical Lung Tumors (Lantern Demonstration).
JUSTIN J. STEIN, Hines, Ill.

Supervoltage Roentgen Treatment of Carcinoma of the Bladder (Lantern Demonstration).
RICHARD DRESSER and ROGER C. GRAVES, Boston.

The Roentgen Treatment of Acute Peritonitis and Other Infections with Mobile Apparatus (Lantern Demonstration).
JAMES F. KELLY and D. ARNOLD DOWELL, Omaha.

Thursday, June 16—9 a. m.

JOINT MEETING WITH SECTION ON PEDIATRICS IN AUDITORIUM OF OPERA HOUSE, CIVIC CENTER

Sinus Disease in Children (Lantern Demonstration).
W. WALTER WASSON, Denver.

Sinus Treatment in Children (Lantern Demonstration).
EDWARD C. MITCHELL, Memphis, Tenn.

Ephedrine in a Physiologic Vehicle and Lateral Head Low Posture in Treatment of the Nose and Sinuses (Lantern and Motion Picture Demonstration).
SIDNEY N. PARKINSON, Oakland, Calif.

Discussion to be opened by JOHN J. SHEA, Memphis, Tenn.

Diagnosis and Treatment of Thymus Disease with X-Rays (Lantern Demonstration).
CLYDE K. HASLEY, Detroit.

Experimental Phases of the Thymus Problem (Lantern and Motion Picture Demonstration).
L. G. ROWNTREE and N. H. EINHORN, Philadelphia.

Thymus Problem in Children (Lantern Demonstration).
A. GRAEME MITCHELL, Cincinnati.

Discussion to be opened by EDITH BOYD, Minneapolis.

Friday, June 17—9 a. m.

Election of Officers

Chairman's Address: Lipoid Pneumonitis (Lantern Demonstration). B. R. KIRKLIN, Rochester, Minn.

Planigraphy: Its Application to Thoracic Diagnosis (Lantern Demonstration). WILLIAM E. HOWES, Brooklyn.

Body Section Radiography in Surgical Conditions (Lantern Demonstration). SHERWOOD MOORE, St. Louis.

Hydronephrosis Caused by Aberrant Renal Blood Vessels Demonstrated by Intravenous Urography (Lantern Demonstration). JACOB ABOWITZ, Los Angeles.

Further Observations of the X-Ray Manifestations of Amebic Infections of the Large Bowel (Lantern Demonstration).
J. C. BELL, Louisville, Ky.

Epiphysitis of the Capitellum of the Humerus (Lantern Demonstration). JOSEPH F. ELWARD, Washington, D. C.

Gastrocolic Fistulas (Lantern Demonstration).
WILBUR P. BAILEY, Los Angeles.

THE SCIENTIFIC EXHIBIT

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit is correlated with the Scientific Assembly as far as possible. Each section of the Scientific Assembly has appointed a section representative or a committee to the Scientific Exhibit. In addition to 155 exhibits, the Board of Trustees has provided for special exhibits on Anesthesia and on Fractures.

All exhibits are open to awards except the special exhibits and the organization exhibits of the American Medical Association headquarters group.

The Scientific Exhibit is located in the Civic Auditorium in Polk Hall and the adjoining corridors with entrances from the Technical Exhibit. Admission to the Scientific Exhibit is limited to Fellows and guests of the Association who have registered for the session and who are wearing badges or holding guest cards. The Scientific Exhibit is not open to the public.

SPECIAL EXHIBIT ON ANESTHESIA

The special exhibit on anesthesia is presented for the second year under the auspices of an exhibit committee appointed by the Committee on Scientific Exhibit of the Board of Trustees as follows: P. J. Hanzlik, San Francisco; Chauncey D. Leake, San Francisco; Philip D. Woodbridge, Boston; Ralph M. Waters, chairman, Madison, Wis.

The 1938 exhibit will deal with the following subjects:

Premedication agents.

Local anesthesia.

General anesthesia.

A pamphlet has been prepared for distribution at the exhibit. Demonstrations will be given continuously throughout the week by a competent corps of anesthetists.

SPECIAL EXHIBIT ON FRACTURES

The exhibit on fractures is continued again this year along somewhat the same lines as last year. The special exhibit committee appointed by the Committee on Scientific Exhibit of the Board of Trustees is composed of the following: Frank D. Dickson, Kansas City, Mo.; Walter Estell Lee, Philadelphia; Kellogg Speed, chairman, Chicago.

The following subjects will be considered:

1. Plaster of Paris: Making and Storing.
2. Application of Plaster of Paris.
3. Fracture of the Lower End of the Radius.
4. Fracture of the Spine—Compression.
5. Fracture of the Ankle.
6. First Aid Treatment of Fractures of the Lower Extremities.

Demonstrations will be given continuously throughout the week. A special folder has been prepared for distribution in connection with the exhibit.

The following physicians will take part in the demonstration:

Otis F. Akin, Portland, Ore.
Harold D. Barnard, Los Angeles, Calif.
Leonard Barnard, Oakland, Calif.
Walter Birnbaum, San Francisco, Calif.
Joseph H. Boyes, San Francisco, Calif.
L. S. Cherney, San Francisco, Calif.
Albert G. Clark, San Francisco, Calif.
Dwight F. Clark, Evanston, Ill.
E. W. Cleary, San Francisco, Calif.
John W. Cline, San Francisco, Calif.
F. E. Clough, San Bernardino, Calif.
Wilbur J. Cox, San Francisco, Calif.
Martin W. Debenham, San Francisco, Calif.
R. L. Dresel, San Jose, Calif.
Charles A. Dukes, Oakland, Calif.
Donald C. Durman, Saginaw, Mich.
C. Fred Ferciot, Lincoln, Neb.
Charles B. Fowler, Oakland, Calif.
Alfred E. Gallant, Los Angeles, Calif.
W. W. Greene, San Francisco, Calif.
I. M. Greer, Phoenix, Ariz.
Delbert Hand, San Francisco, Calif.
Nelson J. Howard, San Francisco, Calif.
Russell F. Jaekle, San Francisco, Calif.
Joseph Josephson, San Jose, Calif.
J. Loutzenheiser, San Francisco, Calif.
G. J. McChesney, San Francisco, Calif.
H. H. Markle, San Francisco, Calif.
Carleton Mathewson Jr., San Francisco, Calif.
J. Minton Meherin, San Francisco, Calif.
Merrill Mensor, San Francisco, Calif.
Arthur R. Metz, Chicago, Ill.
Jesse Nicholson, Philadelphia, Pa.
Norman C. Paine, Glendale, Calif.
E. Payne Palmer, Phoenix, Ariz.
R. S. Palmer, Pomona, Calif.
Leon O. Parker, San Francisco, Calif.
Edward K. Prigge, Los Angeles, Calif.
Lionel D. Prince, San Francisco, Calif.
Paul A. Quaintance, Los Angeles, Calif.
S. B. Richards, San Bernardino, Calif.
Edward, S. Ruth, Los Angeles, Calif.
George Sanderson, Stockton, Calif.
H. J. Schott, Los Angeles, Calif.
A. B. Sirbu, San Francisco, Calif.
Lemuel D. Smith, Milwaukee, Wis.
H. W. Spiers, Los Angeles, Calif.
R. P. Stephens, Oakland, Calif.
Philip Stephens, Los Angeles, Calif.
Steele Stewart, Los Angeles, Calif.
Walter Stuck, San Antonio, Texas
C. S. Venable, San Antonio, Texas
P. M. Walker, Pasadena, Calif.
James P. Warren, San Francisco, Calif.
George Waters, San Francisco, Calif.
H. W. Wilcox, Denver, Colo.
Charles S. Young, Los Angeles, Calif.
C. E. Yount, Prescott, Ariz.

Section on Practice of Medicine

The representative to the Scientific Exhibit from the Section on Practice of Medicine is Fred M. Smith, Iowa City.

ELLIOTT P. JOSLIN, LOUIS I. DUBLIN, HOWARD F. ROOT and HERBERT H. MARKS, Boston and New York:

Advances in the Treatment of Diabetes Mellitus: Exhibit showing recent trends in the incidence of diabetes in various

population groups; the changing incidence of complications of the disease, resulting from the increasing duration of life of diabetic patients, and the problems of treatment presented; new data on the diagnosis, etiology and pathology of the disease and on the results of treatment with protamine insulin; relation of the anterior pituitary and diabetes as demonstrated experimentally and by a comparison of acromegaly and diabetes; advances in the treatment of diabetes and the further progress that can be achieved by intensive application of information of the disease and of up-to-date therapeutic methods.

STACY R. METTIER and CHARLES L. CONNOR, University of California Hospital, Medical Center, San Francisco:

Structural Changes of the Bone Marrow in Various Hematologic States: Exhibit consisting of microscopic specimens of fixed tissue and of coverslip smears; abstract of case histories and important laboratory observations; water color paintings of bone marrow smears; diagrams of aleukemic leukemia; specimens of multiple myeloma; plasmacytoma; purpura haemorrhagica; pernicious anemia; aplastic anemia, and the bone marrow during the course of infections and other conditions.

WILLARD O. THOMPSON and NORRIS J. HECKEL, Chicago:

The Production of Genital Growth in the Male: Exhibit demonstrating that the anterior pituitary-like principle from the urine of pregnant women exerts a powerful stimulus to the growth of the genitalia of the human male; series of photographs showing marked genital growth from its use before and after the age of puberty, notably in patients with hypogenitalism and undescended testes; stages in the production of premature puberty following its administration; treatment of hypogenitalism and undescended testes; importance of avoiding marked genital growth in young boys.

R. J. REITZEL, S. P. LUCIA, Department of Medicine, and KARL F. MEYER, Hooper Foundation for Medical Research, University of California Medical School, San Francisco.

Clinical and Epidemiologic Demonstration of Various Infectious Diseases: Exhibit of clinical data, characteristic temperature charts, case summaries, laboratory diagnostic methods of pneumonia, gonococcic infections, meningitis, brucellosis, tularemia, plague, Weil's disease, rat-bite fever, relapsing fever, psittacosis, venereal lymphogranuloma, trichiniasis and other infectious diseases; presentation with charts and models showing heterogeneous infection chains of such diseases as tularemia, brucellosis, relapsing fever, trichiniasis, sylvatic plague, and psittacosis. Exhibit includes a model typing station for pneumonia.

EDWARD F. HARTUNG, JOHN D. CURRENCE and MARGARET STRAUB NEIL, New York Post-Graduate Medical School and Hospital, New York:

Social Aspects of Chronic Rheumatism: Exhibit showing the extent of the morbidity of rheumatic diseases in the United States; the long duration of disability, and the economic and industrial loss; the almost total lack of hospital facilities to combat this problem, and a plan of hospitalization which will definitely cut down the incidence of chronic disability due to rheumatism.

RUSSELL L. CECIL, New York, *New York State Department of Health,* and *Metropolitan Life Insurance Company.*

New Methods for Pneumonia Control: Exhibit of charts, maps and specimens covering (*a*) modern methods for pneumococcus pneumonia diagnosis, treatment and recent experience with serum treatment; (*b*) survey of pneumonia incidence in United States and Canada; (*c*) outline of the New York State Department of Health program for pneumonia control.

W. A. SODEMAN and G. E. BURCH, Tulane University School of Medicine, New Orleans.

Tissue Pressure and Skin Distensibility; Objective Measurements in Vascular States: Exhibit showing apparatus and methods for the determination of tissue pressure and skin distensibility with the accumulated data; charts exhibiting the application of these data to the interpretation of the normal and abnormal physiology of interchange of fluid between blood vessels and tissue spaces; relationship of these factors to an understanding of the limitation of the degree of cardiac and other types of edema; demonstration of the use of these methods in the diagnosis, prognosis and evaluation of therapy in scleroderma.

AUGUST A. WERNER, St. Louis University Medical School, St. Louis:

Theelin, Clinical Studies: Exhibit showing the results of clinical research with castrate women and the effects on the endometrium and vaginal tissue; presentation of the syndrome accompanying castration, ovarian hypofunction, menopause and involutional melancholia with treatment.

MERRITT B. WHITTEN, Dallas:

Electrocardiogram with Midaxillary Leads: Exhibit illustrating the manner of application of the electrodes in taking midaxillary leads; enlarged reproductions from actual electrocardiograms comparing the midaxillary leads with the conventional limb leads in various cardiac disorders and demonstrating certain advantages of the former leads over the latter; observations demonstrating that in anteriorly located myocardial infarction and in predominant left ventricular strain (as in hypertension and other conditions) the midaxillary leads often show the characteristic electrocardiographic changes of these lesions earlier and to a more marked degree and these changes often persist longer than similar changes seen in the conventional limb leads of the electrocardiogram; apparent advantages of the midaxillary leads in multiple infarctions, interventricular conduction disturbances, pericarditis, and so on, as well as the characteristic changes from digitalis.

BAYARD T. HORTON, CHARLES SHEARD and MARVIN M. D. WILLIAMS, Mayo Clinic, Rochester, Minn.:

Vasomotor Regulation of the Temperatures of the Extremities in Health and Disease: Exhibit of charts and diagrams showing the results of physicophysiologic and clinical investigations concerning (1) surveys of skin temperatures of various portions of the body; (2) degree of vasoconstriction as evidenced in the effects produced on skin temperatures by changes of environmental conditions; (3) effects of ingestion of food on the temperatures of the extremities; (4) relative roles of upper and lower extremities in the regulation of loss of heat from the body in environments ranging from 60 to 95 F.; (5) comparison of results obtained on normal individuals with observations on subjects with peripheral vascular diseases.

E. KOST SHELTON, BENJAMIN N. TAGER and SHELDON A. PAYNE, Los Angeles:

Endocrine Factors in Growth and Development: Exhibit of special photographs of children with endocrine disturbances taken in the nude against a black background marked off in six inch squares, allowing accurate comparison of changes taking place during period of treatment.

Section on Surgery, General and Abdominal

The representative to the Scientific Exhibit from the Section on Surgery, General and Abdominal, is Grover C. Penberthy, Detroit. In addition to the several exhibits, there will be a continuous motion picture program in an adjoining area.

CONRAD R. LAM, Henry Ford Hospital, Detroit:

Experiments on Intra-Abdominal Pressure: Role of distention in atelectasis and postoperative pneumonia: Exhibit of diagrams of apparatus, enlarged reproductions of kymograph records, photographs of pathologic specimens, photomicrographs, tables and transparencies showing the effect of variations in abdominal pressure on respiration and blood pressure, and the influence of increased abdominal tension on the development of postoperative pulmonary complications.

SHERWOOD MOORE, St. Louis:

Body Section Radiography: Exhibit of collection of roentgenograms of conventional type compared with body section roentgenograms, or laminagrams, of the same subject illustrating the advantages of the latter in certain pathologic conditions, certain clinical facts, and, where possible, photographic reproductions of pathologic specimens in pulmonary disease and tuberculosis of bone; illustrating the practical utility of body section radiography in surgical lesions.

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A. C. SCOTT, Scott and White Hospital, Temple, Texas:

Mammary Tumors; Diagnosis and Treatment: Exhibit of moulages, charts and other data dealing with technic for diagnosis of breast tumors demonstrated by series of moulaged breasts and sagittal breast sections showing early dimpling on the skin surface by shadow test; the radical excision of breast tumors shown in each succeeding step by a series of moulages; motion pictures in color demonstrating the shadow test and the radical excision as done with the loop-cautery knife.

WILLIAM OSLER ABBOTT, University of Pennsylvania, Philadelphia, and CHARLES G. JOHNSTON, R. J. NOER, GROVER C. PENBERTHY, J. C. KENNING and J. E. LOFSTROM, Wayne University College of Medicine, Detroit:

Acute Intestinal Obstruction—Treatment by Small Intestinal Intubation: Exhibit of charts showing clinical histories of patients with intestinal obstruction, photographs of roentgenograms before and after treatment, and of roentgenograms indicating the nature and location of the lesions, kymographic tracings of the activity of obstructed intestine and drawings of diseased intestine. Moving picture film depicting technic of treatment.

HAROLD BRUNN and Associates, The Thoracic Clinic, University of California Hospital, San Francisco:

Surgical Conditions of the Thorax: Exhibit of roentgenograms, charts and models of various surgical conditions of the chest including bronchiectasis, tumors, hydatid cysts and others and operation on the heart, and motion pictures.

HARRY C. SALTZSTEIN, EDWARD H. LAUPPE and M. Z. FELDSTEIN, Detroit:

The Care of Advanced Cancer: Exhibit dealing with the clinical course of terminal cancer with analysis of the terminal symptoms of patients who died of cancer; differences in terminal manifestations and clinical mode of exitus of cancer in different regions of the body; average length of terminal care necessary, compared to incidence of these cases in general hospitals and United States mortality figures; the treatment of far advanced cancer, with a discussion of palliative operations, palliative roentgen treatment, general measures and nursing care for advanced cases, and pain relief, showing drugs with comparison of different narcotics and measures to combat morphine addiction; nerve injections; subarachnoid alcohol injections with review of literature, technic (illustrated with diagrams), indications, complications and results.

MANUAL GRODINSKY and EDWARD HOLYOKE, Department of Anatomy and Surgery, University of Nebraska College of Medicine, Omaha.

Fasciae and Fascial Spaces of the Head, Neck and Adjacent Regions and Their Relation to Infections: Exhibit consists of (1) transparencies, four of which are made from diagrammatic drawings derived from dissections, injections, and sections of human material, and the remainder made from tracings on bleached photographs of sections of adult and fetal material; (2) moulages made from transverse sections of adult material.

GORDON B. NEW, F. A. FIGI, F. Z. HAVENS and J. B. ERICH, Mayo Clinic, Rochester, Minn.:

Deformities of the Face, Correction by Plastic Surgery: Exhibit of models, photographs and motion pictures showing the technic of various types of operations for correcting acquired and congenital deformities of the face; the appearance of the patient before and after operation by means of numerous casts and photographs. Subjects treated include: (1) harelip; (2) rhinoplasty; (3) deformities resulting from automobile injuries; (4) various types of deformities of the nose, mandible and ear; (5) use of tubed flap for closing perforations of the cheek resulting from cancer; (6) angiomas and scarring due to burns.

GEORGE W. SWIFT and S. N. BERENS, Seattle:

Cerebrocranial Injuries: Exhibit of specimens mounted in glass showing the different types of injuries to the brain cortex, brain stem and ventricles; post-traumatic atrophies; charts showing the different types of injuries with mortality statistics; charts showing actual brain injuries with photographs; charts showing microscopic sections of concussions of the brain; charts showing post-traumatic sequelae with encephalograms; charts outlining treatment for the three stages (*a*) shock, (*b*) brain injuries, (*c*) sequelae; statistical charts showing a series of head injuries.

EUGENE B. POTTER and P. A. ROHRER, The Mason Clinic, Seattle:

Pararenal Tumors: Exhibit showing case reports of large pararenal tumors, with roentgenograms, gross mounted specimens and microscopic pathologic study; charts with classification of pararenal tumors; charts referable to surgical technic.

R. RUSSELL BEST and N. FREDERICK HICKEN, Omaha:

A Nonoperative Method for Removal of Residual Hepatic or Common Duct Stones: Exhibit showing that stones, mucous plugs, blood clots or clumps of inspissated bile are not infrequently present in the common duct following operations on the biliary tract and that their presence may be suggested by some sign or symptom or may be proved by cholangiography if a T-tube or catheter is present or a biliary fistula exists; presentation of a method of forcing out the smaller foreign bodies by simultaneously increasing the pressure behind them and completely relaxing the sphincter of Oddi by various means; the increased intraductal pressure and flushing out effect is obtained by administering dehydrocholic acid; if a tube or fistula is present, direct irrigation with warm physiologic solution of sodium chloride, olive oil or iodized oil, in addition to the dehydrocholic acid, enables one to increase this intraductal pressure; charts reveal the increase of intraductal pressure by the administration of dehydrocholic acid. Roentgenograms show that foreign bodies in the common duct can be dislodged by the method described; indications and contraindications are presented; the operative removal of common duct stones is illustrated.

JOHN O. BOWER, JOHN C. BURNS and H. A. K. MENGLE, Philadelphia:

Comparative Study of the Reparative Processes in the Gastrointestinal Mucosae Following Division and Suture with Special Reference to Very Fine Catgut Sutures: Exhibit of transparencies showing the results of suture of the divided mucous membrane of the dog's stomach and intestine; photomicrographs showing tissue reaction and comparative rate of absorption of coarse and fine catgut at twenty-four hour intervals after operation; gross and transparent specimens showing arterial supply of the stomach of man and dog; motion pictures in color showing the technic of various types of gastric resection with special reference to the use of 5-0 chromic catgut.

HAROLD LINCOLN THOMPSON, Los Angeles:

Acute Perforation of Peptic Ulcer: Exhibit of charts, diagrams, drawings, photographs, surgical and pathologic specimens and roentgenograms illustrating the etiology, symptoms, diagnosis, pathology, treatment and results of treatment of acute perforation of gastric, duodenal and gastrojejunal ulcers.

JOEL W. BAKER and MAURICE F. DWYER, The Mason Clinic, Seattle:

Results in the Surgical Treatment of Duodenal Ulcer: Exhibit of photographs of correlated preoperative and postoperative roentgenograms and resected specimens; roentgenologic function and apparent (false) dysfunction from one to two weeks after operation; indications for surgery in duodenal ulcer; individual indications for the various surgical procedures used in duodenal ulcers; mounted specimens, illustrating hemorrhagic and perforating ulcers.

BERNHARD STEINBERG, Toledo Hospital, Toledo, Ohio:

Protection Against Peritonitis: Exhibit demonstrating tissue reaction together with the changing picture of the peritoneal exudate throughout the course of diffuse experimental peritonitis; peritoneal exudate correlated with the peripheral blood and the general condition of the cardiovascular system exemplified by electrocardiographic tracings and continuous blood pressure throughout the entire course of peritonitis; principles of preventive and curative treatment drawn from the anatomic and abnormal physiologic changes observed during the experi-

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ments; suggestive therapeutic measures, both preventive and curative.

ALBERT D. DAVIS, San Francisco:

Plastic Surgery: Exhibit of photographs showing patients prior to operation, operative steps, appearance during reconstructive surgery, and postoperative results.

FELIX L. PEARL, San Francisco:

Muscle-Splitting Extraperitoneal Lumbar Ganglionectomy; A Satisfactory Approach to the Retroperitoneal Space: Motion picture demonstration in color of the operation of lumbar ganglionectomy, performed by a completely muscle-splitting extraperitoneal approach; interesting anatomic landmarks, indicating the use of the same approach for extraperitoneal exposure of the great abdominal vessels, ureter, psoas muscle and vertebrae.

DUDLEY SMITH, San Francisco:

Management of Colostomy: Motion picture demonstration in color showing the details of colostomy care and the technic used to insure comfort, cleanliness and freedom from odor; patients engaged in various professional, business and industrial occupations and others enjoying the usual social diversions and sports; "social isolation" of colostomy patients shown to be due to ignorance of the details of proper care.

Section on Obstetrics and Gynecology

The representative to the Scientific Exhibit from the Section on Obstetrics and Gynecology is H. Close Hesseltine, Chicago. Motion pictures will be shown under the auspices of the section in an area adjoining the exhibit.

JOHN C. RUDDOCK and ROBERT B. HOPE, University of Southern California, Los Angeles:

Peritoneoscopy: Exhibit of diagrams, pictures, tables, charts and posters describing technic for visualization of abdominal cavity; hazards of the procedure and how avoided; method of obtaining biopsies; special technics for stomach examination, division of adhesions; analysis of cases showing pathologic conditions encountered and evaluation of the procedure.

L. H. GARLAND and A. V. PETTIT, San Francisco:

Prediction of Certain Types of Difficult Labor by Pelviography; An Obstetric and Radiologic Investigation: Exhibit of a series of transparencies illustrating the basic principles of the roentgen diagnosis of the various morphologic types of female pelvis together with adequate text and tabular information; the four main types of female pelves are illustrated and the exact clinical significance of these various types in a series of 300 carefully studied cases is outlined.

RICHARD TORPIN, University of Georgia School of Medicine, Augusta:

Placental Site Studies Using an Original Method of Amnionic Sac Distention: Exhibit of (1) paraphernalia used; (2) fresh placental sac distended in a tank of fluid showing the cervical opening and two opposite bulges located at the site of the uterine horns; (3) clay models of distended sacs showing location, outline and approximate size of the placenta and the character of the placental margin, whether normal, marginate or circumvallate.

CHARLES EDWIN GALLOWAY and TOM D. PAUL, Evanston, Ill.:

The Cervix and Colored Microphotography: Exhibit demonstrating the use of colored photographs for teaching purposes as well as for records; the camera; a model of the female pelvis and black speculum in place; shadow boxes with colored slides; projector with a small screen.

JULIAN M. BRUNER, Des Moines, and L. E. ROSEBROOK, Ames, Iowa:

Photographic Records of the Cervix Uteri: Exhibit demonstrating a method of making photographic records of the cervix uteri. Photographs illustrating lesions of the cervix; special speculum required for this work illustrated by drawings; method described in detail whereby the gynecologist can make photographic records of the cervix in the office.

FRED L. ADAIR and EDITH L. POTTER, Chicago:

Causes of Death in the Fetal and Neonatal Period: Exhibit of photographs, drawings, roentgenograms and diagrams showing causes of death divided into six groups—anoxemia, trauma, infections, malformations, idiopathic diseases, prematurity, each of which is subdivided into principal maternal conditions causing or associated with each group, and the pathologic conditions produced in the fetus or infant as anoxemia—placenta praevia, abruptio placentae and cord abnormalities, producing petechial hemorrhages, aspiration of amniotic fluid, depression of respiratory center, and so on in the fetus and infant.

In an area adjoining the exhibits of the section, motion pictures on obstetrics and gynecology will be shown on a definite schedule throughout the week.

E. D. PLASS, Iowa City: *Delivery.*
J. B. DE LEE, Chicago: *Treatment of Asphyxia Neonatorum.*
H. O. JONES, Chicago: *Subtotal Abdominal Hysterectomy.*
F. L. ADAIR, Chicago: *Colpocleisis.*

Section on Ophthalmology

The section exhibit committee of the Section on Ophthalmology consists of Georgiana Dvorak-Theobald, Oak Park, Ill., chairman; Dohrmann K. Pischel, San Francisco, and Derrick T. Vail Jr., Cincinnati. A motion picture program will be conducted continuously throughout the week in an area adjoining the exhibits.

JOHN E. L. KEYES and HARRY GOLDBLATT, Institute of Pathology, Western Reserve University, Cleveland:

Vascular Changes in the Eyes in Experimental Hypertension: Exhibit of colored drawings of the fundus oculi in experimental hypertension and human hypertension; photomicrographs illustrating changes found in the ocular vascular system in experimental hypertension and human hypertension.

DOHRMANN K. PISCHEL, San Francisco:

Statistics on Retinal Detachment Operations: Exhibit showing statistical data in all cases of retinal detachments in which operation was performed at Stanford Hospital for past four years; results, type of detachment, presence of holes and other facts.

PHILLIPS THYGESON, New York, and POLK RICHARDS, United States Indian Service, Albuquerque, N. M.:

Nature of the Filtrable Agent of Trachoma: Exhibit presenting a summary of a series of experimental studies of trachoma which lead to the conclusion that trachoma is a virus disease.

HERMANN M. BURIAN, The Dartmouth Eye Institute, Dartmouth Medical School, Hanover, N. H.:

Peripheral Fusion and Eye Movements: Exhibit showing that instrumentation, in which projection lanterns and polarizing material differentiate the images formed in the two eyes, is used to demonstrate that changes in the relative direction of the visual axes of the eyes can be produced by purely peripheral visual stimuli, and that the fusional innervations resulting from peripheral stimuli can dominate foveal fusion.

FREDERICK C. CORDES, San Francisco:

Collection of Old Ophthalmoscopes: Exhibit of a collection of ophthalmoscopes, including a replica of Helmholtz's ophthalmoscope, together with old models dating from Jaeger down through the early electrical instruments; instruments used by Fuchs, Jackson, Thorington, de Schweinitz and others; interesting and odd instruments, including a binocular reflecting ophthalmoscope.

CARL E. RICE, United States Public Health Service, Washington, D. C., and CONRAD BERENS, New York:

Medical Aspects of Aid for the Needy Blind: Exhibit showing that forty states and territories are now cooperating with the Social Security Board in giving financial aid to the needy blind; efforts made to build up high medical standards in the state programs having to do with this matter; increasing interest shown in the various states in organized prevention of blindness and restoration of vision in needy persons in connection with aid to the blind; state laws and state practice in these matters in varied and interesting avenues during the past two years.

OTTO BARKAN, San Francisco:

Glaucoma: Investigations, Anatomic Classification and Recently Developed Surgical Procedures: Exhibit of a series of plaster casts, drawings and photographs demonstrating the division of primary glaucoma into two main anatomic types according to the different mechanical causation of the increased intra-ocular pressure in each; critical survey of mode of action and sequelae of present day operations on the basis of this classification; effect of injection of physiologic solution of sodium chloride into the anterior chamber on the configuration of the iridic angle; demonstration of two surgical procedures devised to relieve the mechanical cause of two respective types of glaucoma; photographs and case histories of goniotomy operation for deep chamber type of glaucoma and a recently devised surgical procedure for shallow chamber type of glaucoma.

WALTER FINK, Minneapolis:

Ocular Dynamics: Exhibit demonstrating the various methods employed in studying ocular duction power; tabulated results of a series of cases in which these various methods have been employed; conclusions suggesting the comparative value of these methods.

DANIEL B. KIRBY, New York:

Cataract Extraction: Motion picture demonstration in color showing preliminary iridectomy, capsulotomy extraction, discission of after cataract and intracapsular extraction with peripheral iridotomy.

LOUIS LEHRFELD, Philadelphia:

Vernal Conjunctivitis: Motion picture demonstration in color describing the types of vernal conjunctivitis and offering clinical evidence of reproduction of clinical symptoms out of season by instillation of causative allergens in conjunctiva culdesac and showing that vernal conjunctivitis is an ocular manifestation of an allergy.

WATSON GAILEY, Bloomington, Ill.:

Intracapsular Extraction of Senile Cataract: Motion picture depicting the complete routine of cataract extraction, starting with the setup in surgery, method of draping the patient, close-up of the instrument table, operating table, lighting equipment, and so on, and method of lifting the patient from the operating table to the cart.

CLIFFORD WALKER, Los Angeles:

The Performance and Characteristics of Ocular Muscles with Respect to Separated Retina and Some Other Operations and Conditions: Motion picture demonstration in color.

Section on Laryngology, Otology and Rhinology

The representative to the Scientific Exhibit from the Section on Laryngology, Otology and Rhinology is Robert C. Martin, San Francisco.

JOHN A. MARSHALL, University of California Medical Center, San Francisco:

Clinical Dental Pathology: Exhibit of photographs, photomicrographs, reproductions from roentgenograms and clinical specimens of extracted teeth showing the various lesions of the hard tissues in the initial, intermediate and terminal stages.

WILLIAM J. MELLINGER, Santa Barbara:

Petrous Apex of the Temporal Bone and Its Relations: Exhibit consisting of dissected specimens of the petrous apex; sections of temporal bone in different planes; Dorello's canal dissected; skull specimens showing different types of the apex, and roentgenograms of petrous bone.

WALTER P. COVELL, Hooper Foundation, San Francisco, L. J. BLACK, University of California, San Francisco, and N. A. WATSON, University of California, Los Angeles:

Recent Advances in Otologic Research: Exhibit of charts and experimental portable hearing aid dealing with A: (1) application of the selective amplification principle to hearing aids; (2) charts comparing bone conduction with air conduction for hearing of pure tones and speech sounds; B: (1) charts and photomicrographs dealing with histopathologic changes in the peripheral auditory mechanism for drug-injected animals and certain vitamin deficient animals; diagrams of equipment used for electrical hearing tests for eliciting responses, charts illustrating results obtained, photograph records demonstrating differences between cochlear response and auditory nerve action potentials.

A. C. FURSTENBERG, MAX M. PEET and I. JEROME HAUSER, University of Michigan Medical School, Ann Arbor, Mich.:

Present Status of Zinc Sulfate as a Possible Preventive of Poliomyelitis: Exhibit of charts summarizing original work on laboratory animals which led to the belief that zinc sulfate may possibly prevent poliomyelitis in human beings; description of difficulties encountered and inadequacies of originally described method of application of zinc sulfate; demonstration of a simplified technic for administration of zinc sulfate; slides and charts showing the present status of work; summary of questions to be answered and problems to be solved.

SIMON L. RUSKIN, New York:

Venous and Arterial Circulation of the Nose and Accessory Sinuses and Its Surgical Significance: Exhibit diapositives and charts describing the circulatory mechanism; color photographs of the vessels as they are seen in the various surgical procedures; course of the blood supply from the carotids to the final distribution and the points for ligation and optimum lines for incision; photomicrographs of the vascular mechanism in the mucosa.

Section on Pediatrics

The representative to the Scientific Exhibit from the Section on Pediatrics is F. Thomas Mitchell, Memphis, Tenn.

ATHA THOMAS, T. L. HOWARD, WILLIAM F. STANEK, E. I. DOBAS and ROY FORBES, Children's Hospital, Denver:

Abnormal Calcification in Children: Exhibit of roentgenograms and transparent photographs of postmortem specimens, illustrating abnormal calcium deposits in children, including faulty elimination, renal rickets; faulty nutrition, scurvy and rickets; glandular dysfunction, hyperparathyroid disease; inflammatory conditions, dermatomyositis and tuberculosis; traumatic conditions, myositis ossificans.

KATSUJI KATO, Chicago:

Blood Picture in Health and Disease: Exhibit of drawings in natural colors of blood and bone marrow smears in various diseases; pictures of normal conditions at various age levels included for comparison.

F. M. POTTENGER JR., Pottenger Sanatorium and Clinic, Monrovia, Calif.:

Study of Childhood Asthma as a Developmental Disease: Exhibit of (1) photographs of asthmatic children showing deviations from the normal; (2) graphs showing some of the anthropometric measurements of asthmatic patients as compared with the standard tables; (3) photographs and charts of experimental animals which show symptoms like those found in allergic children and their deviation from the normal; (4) charts showing the importance of certain factors in the development of the disease.

ERNST WOLFF, NORMAN EPSTEIN and T. HENSHAW KELLY, Mount Zion Hospital, San Francisco:

Prevention and Control of Impetigo of the Newborn: Exhibit consisting of a pictorial demonstration of seven years' experience in the epidemiologic control of impetigo of the newborn; charts depicting (1) the clinical picture; (2) bacteriologic observations; (3) mode of infection, with such human sources as the mother, nurse, attending physicians, maids and porters, laundry workers, visitors and fellow nursling, together with other factors, as delivery room technic, nursery technic, physical setup of nursery, nursing organization and methods of medical examination; (4) organization for prevention and epidemiologic control, dealing with constant supervision of human and material sources of infection, nursery setup with photographs of floor plan and specially constructed equipment, nursery routine and care and treatment of infected baby; (5) statistical review of clinical results over period of seven years.

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JOSEPH A. JOHNSTON, P. J. HOWARD, Henry Ford Hospital, and BRUCE DOUGLAS, Herman Kiefer Hospital, Detroit:

Endogenous Tuberculous Reinfection; Adult-Type Lesions Appearing in Children After Their Removal from Contact: Exhibit of x-ray films of children who showed on first examination either negative films or first infection types of disease but whose subsequent plates showed the development of the adult type.

DAVID J. COHN, Michael Reese Hospital, Chicago:

Oxygen Tent of New Design: Exhibit of a comfortable and easily portable oxygen tent, using a small, simply constructed and efficient cooling unit; details of construction shown and operation demonstrated.

Section on Pharmacology and Therapeutics

The representative to the Scientific Exhibit from the Section on Pharmacology and Therapeutics is Wallace M. Yater, Washington, D. C.

W. P. MURPHY, RAYMOND DILLON and ISABEL HOWARD, Boston:

Blood Dyscrasias: Diagnosis and Effective Treatment: Exhibit of charts stressing the importance of adequate, controlled treatment of some of the more important blood dyscrasias and depicting the several advantages of the maintenance treatment of the patient with pernicious anemia with highly concentrated solution of liver extract by intramuscular injection; motion picture in color showing important features of the clinical picture and of the blood in several diseases of the blood.

A. C. IVY, R. R. GREENE and M. W. BURRILL, Chicago:

Experimentally Produced Intersexuality in the Rat: Exhibit of charts, photographs, whole mounts and wax plate models of intersexed rats, normal female and normal male rats; the intersexed rats are genetically female and have been masculinized by antenatal administration of male sex hormone.

WALTMAN WALTERS, E. J. KEPLER and R. M. WILDER, Mayo Clinic, Rochester, Minn.:

Adrenal Cortical Syndrome and Allied Disorders: Exhibit dealing with studies in adrenal cortical tumors and allied disorders carried on over a period of years on patients who presented symptoms suggesting the adrenal cortical syndrome; differentiation of adrenal cortical tumors, pituitary basophilism, and so on; transparencies illustrating the appearance of patients prior to and subsequent to the removal of adrenal cortical tumors; motion picture describing the anatomy of the adrenal gland, its surgical lesions, results of operation and the surgical approach to the gland through a posterolumbar, retroperitoneal incision.

JOSEPH G. HAMILTON, University of California Hospital, San Francisco:

The Demonstration of the Measurement of the Rate of Absorption and Excretion of Certain of the Artificially Radioactive Elements Such as Sodium, Potassium and Chlorine: Exhibit of charts, diagrams, Geiger counter and necessary accessories; experimental procedure permitting the observation by visitors of the method used; demonstration of the rate of excretion in the urine of these radioactive substances.

R. N. HARGER, Indiana University School of Medicine, Indianapolis:

Rapid Methods for the Detection of Poisons for Use in Emergency Cases: Exhibit of reagents, apparatus and procedures used in the identification of certain common poisons in stomach contents, urine and blood, and the detection of a few volatile poisons in breath; description of original investigations in developing new procedures or simplifying older methods.

ALFRED E. KOEHLER, Santa Barbara, Calif.:

Comparison of the Intravenous Dextrose Tolerance with the Apparent Oral Tolerance: Exhibit of apparatus for the intravenous injection of dextrose at a continuous constant rate over a period of two hours; blood sugar tolerance curves are shown and a comparison made with similar curves after the oral administration of dextrose demonstrating that the intravenous curve probably gives a better picture of the true tolerance, as the oral curves may be markedly variable, owing apparently to variation in absorption.

SAMUEL S. ALTSHULER, Detroit, and RUDOLPH LEISER, Eloise Hospital, Eloise, Mich.:

Crystalline Insulin: Exhibit dealing with (1) chemical properties, showing description of the crystals, preparation of crystalline insulin, analysis of the insulin, solubility and stability; (2) pharmacologic properties, showing effect on the blood sugar level as compared with unmodified insulin, role of zinc content and the effect of intravenous administration of crystalline insulin; (3) clinical use, showing results of the use of crystalline insulin in 150 diabetic patients over a period of two years and the method of administration.

EDWIN E. OSGOOD, University of Oregon, Portland:

Culture of Human Marrow as an Aid in the Evaluation of Therapeutic Agents: Exhibit demonstrating a simple method of growing human bone marrow, permitting quantitative studies of the interaction of living human cells, noxious agents and therapeutic agents under accurately controlled conditions; results of studies of the toxicity of sulfanilamide, its action on infections with known numbers of various micro-organisms with or without the presence of human cells or serum, illustrated under the microscope, with photomicrographs and wall charts; applicability of the method to studies of other agents.

Section on Pathology and Physiology

The representative to the Scientific Exhibit from the Section on Pathology and Physiology is F. W. Konzelmann, Philadelphia.

FRANK W. KONZELMANN, EDWARD WEISS, LAWRENCE W. SMITH, WALTER I. LILLIE and EDWIN S. GAULT, Philadelphia:

Cardiovascular-Renal Disease, Clinical and Pathologic Correlation: Exhibit of charts illustrating statistical data; classification of various types of cardiovascular-renal disease with the important points of diagnostic value presented in diagram form; changes in eyegrounds and gross and microscopic pathology of heart vessels and kidney illustrated by photographs and wax reproductions; wax reproductions of eyegrounds mounted in representative death masks illustrating in a practical way the picture seen through the ophthalmoscope.

J. M. HILL, Department of Pathology, and LEWIS WATERS, Department of Medical Art, Baylor University College of Medicine, Dallas, Texas:

Hemopoiesis: Exhibit of transilluminated color photomicrographs demonstrating (1) the formation of red cells (erythropoiesis) giving phases of maturation, with classification of anemias due to decreased red cell production; (2) the white blood cells (Schilling differential), showing a graphic representation of formation of granular leukocytes, and the mechanism of their reaction in health and disease; (3) the aleukemic and leukemic states, explained on the morphologic and physiologic basis of the maturation of leukocytes; (4) models and charts illustrating use of laboratory tests in the diagnosis of familial hemolytic anemia.

JACOB GERSHON-COHEN, HARRY SHAY, SAMUEL S. FELS, THEODORE MERANZE and DAVID R. MERANZE, Philadelphia:

The Thymus, Experimental Studies in Its Physiology: Exhibit of charts, pictures, pathologic specimens properly mounted, roentgenograms and the experimental animals themselves arranged to demonstrate the effect of the thymus on the function of the genital system, the pituitary, adrenals and general body growth. The studies were made by inducing atrophy of the thymus gland by roentgen irradiation.

H. J. CORPER, National Jewish Hospital, Research Department, Denver:

Immunity in Tuberculosis; Historical and Experimental: Exhibit demonstrating the various phases of experimental immunity and its production; illustrated historical album of immunity in tuberculosis.

VIRGIL H. MOON and DAVID R. MORGAN, Department of Pathology, Jefferson Medical College, Philadelphia.

Shock, Its Mechanism, Pathology and Sequelae: Exhibit dealing with the mechanism of shock, shown by a diagram illus-

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trating the operation of the "vicious circle"; the pathology of shock shown by gross specimens and by illuminated photomicrographs from human cases and from animals; presentation of progressive stages of pulmonary edema and pneumonia as sequelae of sublethal shock; explanation of the differentiation of shock from hemorrhage.

HENRY C. SWEANY and ROSALIND KLASS, Municipal Tuberculosis Sanitarium, Chicago:

X-Ray Diffraction Analysis as Applied in Pneumoconiosis: Exhibit of illustrations, photographs, charts, transparencies and gross pathologic specimens showing possibilities of x-ray diffraction as an analytic procedure in the determination of detrimental silica; diffraction patterns of various minerals as well as a typical silica pattern, compared to patterns obtained by analysis of powdered human lung tissue from patients who were exposed to various dusts; patterns of normal and tuberculous lungs; chemical analysis for silica; microscopic and gross pathology.

FRANK B. YOUNG, Long Beach, Calif.:

Diagnosis of Acute Alcoholism by Chemical Methods: Exhibit showing apparatus for securing alcohol from the exhaled air, saliva and urine by use of distillation under partial vacuum; colorimeter for comparison of test solution with solutions of standardized strength; technic of making tests, based on the reduction of potassium bichromate by alcohol.

HERMANN BECKS, University of California, George Williams Hooper Foundation for Medical Research and College of Dentistry, San Francisco:

Experimental Production of Osteodystrophia Fibrosa Cystica in Dogs by Deficient Diets: Exhibit of photomicrographs of histologic material showing experimental production of osteodystrophia fibrosa cystica in dogs by deficient diets.

CHARLES WEISS, HAROLD BRUNN and A. KAPLAN, Mount Zion Hospital, San Francisco:

Cellular Immunity: A. Comparison of humoral and tissue immunity to staphylococcus toxin. B. Cellular proteinases in inflammation and in experimental tuberculosis in rabbits. Exhibit (*a*) dealing with immunity to staphylococcus toxin; (*b*) dealing with cellular proteinases in inflammation and in experimental tuberculosis in rabbits with data on the cathepsin, dipeptidases and carboxypolypeptidases of polymorphonuclear white blood cells and monocytes of inflammatory exudates as well as those produced by the intrapleural injection of the phosphatide of the tubercle bacillus.

CHEVALIER L. JACKSON, Philadelphia:

Cancer of the Larynx: Exhibit showing histopathology, especially as determined by biopsy, and its importance in selection of method of treatment; early diagnosis and its relation to end results demonstrated by transparencies, gross specimens and motion pictures; technic of laryngofissure, laryngectomy and irradiation, with statistics of five year cures.

F. W. HARTMAN and VICTOR SCHELLING, Henry Ford Hospital, Detroit:

Studies on Hexyl-Chloro-M-Cresol and Other Carbocyclic Antiseptics: Exhibit of charts, tables, cultures and photographs presenting experimental and clinical observations on a new chemical of high antiseptic activity; observations on other chemicals of the same general composition; effect of acids on the antiseptic activity of this group of compounds; comparative value of this group of carbocyclic antiseptics contrasted with that of the salts of heavy metals as indicated by phenol coefficient studies, toxic index studies, and clinical applications.

BENJAMIN T. TERRY, Tacoma General Hospital, Tacoma, Wash.:

Three Aids in the Rapid Diagnosis of Tissues: Exhibit showing (1) practical gross diagnosis; (2) a new, easily made, inexpensive microtome for fresh and fixed tissues; (3) an inexpensive, easily made, instantaneously acting, differential stain for fresh or fixed tissue. Clinical facts presenting a problem will be given. In order to arrive at a solution, surgical or autopsy tissues will be shown and important practical gross diagnostic features will be stressed. The diagnosis will be established by a microscopic examination of sections cut on the new microtome and stained by the new stain. Lesions, technic, and interesting and important diagnostic points will be shown in moving pictures. Those interested can learn to make and use the microtome and stain. Abundant opportunity to practice under supervision will be afforded.

HARRY C. SCHMEISSER and JOSEPH L. SCIANNI, University of Tennessee, Memphis:

History of Medical Art: Exhibit of photographs showing ancient, medieval, modern and contemporary medical art.

HENRY DOUBILET, RALPH COLP and I. E. GERBER, The Mount Sinai Hospital, New York:

Sphincter of Oddi—Experimental and Clinical Studies: Exhibit of original apparatus shown for the kymographic recording of the resistance of the human sphincter of Oddi to continuous perfusion; demonstration of actual practical bedside procedure; effect of drugs shown by kymographic tracings; demonstration of physiologic principles of visualization of the biliary tract with iodized oil; methods for the detection of pancreatic reflux and for visualization of the pancreatic duct in the human being; instrument for the endocholedochal section of the sphincter of Oddi; results of both experimental and clinical endocholedochal sphincterotomy, as regards the safety and effectiveness of the procedure.

WILLIAM STEVENSON and B. S. KLINE, Mount Sinai Hospital, Cleveland:

Exact Photographic Medical Illustration: Exhibit of prints with colors of original photographed specimens including gross clinical and gross and microscopic pathologic specimens exactly reproduced; color prints of color transparencies; steps in the preparation of the exact color prints, and color transparencies of gross and microscopic specimens and of color prints.

LEWIS WATERS, Department of Medical Art, Baylor University College of Medicine, Dallas, Texas:

Art and Photography as Applied to Medical Illustration: Exhibit of drawings, photographs and transilluminated pictures in black and white and in color, illustrating methods of medical illustration including methods of making motion pictures; presentation of a new color process for photomicrography and clinical photography.

JOHN D. CORBIT JR., Philadelphia General Hospital, and HERMAN A. SHELANSKI, University of Pennsylvania, Philadelphia:

Silver Picrate in the Control of Bacterial, Yeast and Protozoan Infections: Exhibit showing methods of diagnosis for infections due to Monilia albicans and Neisseria gonorrhoeae, and for infestations due to trichomonad flagellates; staining and cultural methods for these organisms together with the effect on them of silver picrate, in vitro and in vivo.

Section on Nervous and Mental Diseases

The representative to the Scientific Exhibit from the Section on Nervous and Mental Diseases is Roland P. Mackay, Chicago. Motion pictures will be shown in addition to the exhibits, in an adjoining area.

C. W. IRISH, Los Angeles:

Spontaneous Cerebral Vascular Lesions and Distributions of the Major Vessels: Exhibit of photographs of pathologic specimens demonstrating the various sites and types of cerebral vascular lesions; color negatives of injected cerebrums, different colors demonstrating the distribution of each major vessel, external views of the cerebrum, sagittal sections and coronal sections.

A. E. BENNETT, AVIS PURDY and HELEN JORDAN, Bishop Clarkson Memorial Hospital, Omaha:

History and Development of Modern Psychiatric Nursing: Exhibit of pictures and charts showing the historical evolution of modern psychiatric treatment from 4000 B. C.; the tran-

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sition from primitive, inhumane nursing management to the modern periods of reform in state hospital development and the mental hygiene movement; the present trend of treating the mentally ill through well equipped psychiatric units in general hospitals, illustrated through photographs, charts, teaching manual and motion pictures.

CHARLES P. LARSON, Western State Hospital, Fort Steilacoom, Wash.:

Mountings of Neuropathologic Specimens: Exhibit of specimens of neuropathologic interest, including unusual tumors, aneurysms, and other specimens; mountings are of the watch glass type, the total cost per specimen averaging less than 60 cents; method of mounting will be demonstrated; the finished product is notable for its maximum visibility and beauty.

TRACY J. PUTNAM and H. HOUSTON MERRITT, Boston City Hospital, Boston:

Experimental and Clinical Studies of New Anticonvulsant Drugs: Exhibit presenting a list of old and new compounds tested; diagrams of method of testing on animals and charts of results; formulas of drugs found effective in animals; statistics of patients treated with most effective compounds; representative case histories.

G. WILSE ROBINSON and G. WILSE ROBINSON JR., Kansas City, Mo.:

Experiences and Studies in the Use of Insulin in Various Forms of Psychoses: Exhibit of (*a*) graphs, each of which represents the entire course of treatment of individual patients of a series of selected cases, showing behavior, with a quantitative graph of behavior changes from week to week; weekly laboratory determinations taken every hour during the course of the treatment, with changes in blood sugar, blood counts, hemoglobin and differentials, and metabolism as measured by the consumption of oxygen; clinical charts carried continuously from beginning to end of the entire course of treatment; and observable clinical reactions as measured by depth of coma, severity of spasmodic reactions, and psychic state during each individual treatment; (*b*) presentation of results in the treatment of acute alcoholic psychoses with insulin; (*c*) presentation of technical equipment and improvements, modifications of original procedure, which have aided in promoting understanding and minimizing complications.

HENRY R. VIETS and ROBERT S. SCHWAB, Massachusetts General Hospital, Boston:

Myasthenia Gravis, Diagnosis and Treatment with Prostigmine: Exhibit of charts giving the principal symptoms, age of onset and prevalence; the use of prostigmine as a diagnostic measure elucidated by charts and motion pictures as experienced at the Massachusetts General Hospital.

PAUL A. O'LEARY, Mayo Clinic, Rochester, Minn.; HAROLD N. COLE, Cleveland; J. EARLE MOORE, Baltimore; JOHN H. STOKES, Philadelphia; UDO J. WILE, Ann Arbor, Mich.; THOMAS PARRAN, R. A. VONDERLEHR and LIDA J. USILTON, Washington, D. C.:

Results of the Treatment of Tabes Dorsalis: Exhibit consisting of a group of graphs showing the value of different systems of treatment, symptoms most readily influenced, value of early treatment of syphilis versus late treatment of neurosyphilis and the value of the fever therapy in tabes dorsalis.

ABRAHAM LOW, Chicago:

Metrazol Shock Therapy: A motion picture demonstrating one of the newer treatments of functional psychoses.

J. R. JAEGER, Denver:

Neurosurgery Operations: Motion picture demonstration in color, showing the various standard operations performed on the brain, spinal cord and peripheral nerves.

Section on Dermatology and Syphilology

The representative to the Scientific Exhibit from the Section on Dermatology and Syphilology is Clark W. Finnerud, Chicago. A special feature of the section is a group of exhibits on industrial dermatoses.

JOSEPH V. KLAUDER, Philadelphia:

Swine Erysipelas Infection: Exhibit of charts concerning the infection in (1) swine, (2) the organism, (3) the infection in man, (4) occupation of patients involved; photographs of the infection in swine and in man; specimens of the infection in swine, stained smears of the organism, cultures of the organism; colored motion pictures of the infection in man.

THEODORE CORNBLEET and HENRY SCHORR, Chicago:

Is Psoriasis a Metabolic Disease? Exhibit showing the sugar content of the skin in health and its variations; the changes in the normal content in psoriasis (both in the lesions and the normal skin); various agents and maneuvers used in the treatment of psoriasis and how they affect the sugar content of the skin; data used to support a metabolic theory of the cause of psoriasis.

J. E. MOORE, Baltimore, and R. A. VONDERLEHR, United States Public Health Service, Washington, D. C.

The Diagnosis of Syphilis: Exhibit of lantern slides presenting the differential diagnosis of syphilis by clinical and laboratory means in complete and condensed form.

GEORGE V. KULCHAR and JOHN F. CARD, Stanford University Hospital, San Francisco:

Divided Doses of Typhoid Antigen H (Formalinized) in the Treatment of Neurosyphilis: Exhibit of (1) charts illustrating the method of preparation of the antigen by formaldehyde precipitation; (2) description of the method of its use in the treatment of neurosyphilis, particularly in patients not suitable for other forms of fever therapy; (3) charts illustrating daily fever curves in response to graduated doses; (4) charts illustrating clinical and serologic results.

HARRY E. ALDERSON, San Francisco:

Rhinoscleroma: Exhibit of photographs and photomicrographs of all rhinoscleroma cases reported in California with many examples from San Salvador.

HIRAM E. MILLER and HOWARD MORROW, University of California Medical School, San Francisco:

Coccidioidal Granuloma: Exhibit demonstrating (1) the clinical types of the disease by photographs and x-ray films, (2) the pathology with specimens and photomicrographs, (3) the cultural characteristics and types of the organism, (4) immunity as shown by skin reactions, (5) habitat of the organism, (6) results of animal inoculations and (7) interesting historical facts.

SAMUEL AYERS JR. and NELSON PAUL ANDERSON, College of Medical Evangelists, Los Angeles:

Natural Color Photography in the Teaching of Dermatology: Exhibit of lantern slides illustrating various disorders of the skin showing recent development of improved color film to photograph cutaneous lesions in their natural color. Demonstration of apparatus and technic employed.

ARNE E. INGELS, San Francisco:

Poison Oak Plants, Extracts, Dermatoses and Treatment: Exhibit showing poison oak dermatitis, poison oak remedies, and so on; pressed poison oak plants in all its stages; products of poison oak extract; mode of administration; different phases of poison oak dermatitis; photographs of conditions.

MAURICE DORNE, A. W. STILLIANS and T. K. LAWLESS, Chicago:

Treatment of Argyria: Motion picture demonstration in color of argyria, the technic of treatment and the results.

MARY A. MARCUS, New York:

Mycologic, Histologic and Therapeutic Observations in Psoriasis: Exhibit of photomicrographs of psoriatic cases; photomicrographs showing the micro-organism in the lesions of psoriasis; photomicrographs of the micro-organism prepared from culture at different stages which demonstrate different phases of the development of the micro-organism for its specific identification.

Symposium on Industrial Dermatoses

United States Public Health Service Cooperating with the Section on Dermatology and Syphilology.

LOUIS SCHWARTZ, United States Public Health Service, New York, and MARION B. SULZBERGER, Postgraduate Medical School, Columbia University, New York:

Occupational Dermatoses: Exhibit of charts, photographs and moulages; miscellaneous small samples of actual materials, such as rubber and wood, which have caused industrial dermatoses.

HARRY R. FOERSTER, Milwaukee:

Occupational Dermatoses: Exhibit of photographs of occupational dermatoses.

JOHN G. DOWNING, Boston:

Occupational Dermatitis: Exhibit of transparencies showing the location and type of eruptions found in various industrial workers; a series of pictures depicting the various stages seen in the production of dermatitis factitia.

C. GUY LANE, Boston:

Education in Occupational Dermatoses: Exhibit of posters, indicating the needs and purposes of such education, the group to whom it should be directed, plans for course in occupational dermatoses, and outline of subjects to be covered.

Section on Preventive and Industrial Medicine and Public Health

The representative to the Scientific Exhibit from the Section on Preventive and Industrial Medicine and Public Health is Paul A. Davis, Akron, Ohio.

ERNEST C. DICKSON, CHARLES E. SMITH and ARTHUR LACK JR., Stanford University School of Medicine, San Francisco:

Acute Primary Type of Infection with Fungus Coccidioides: Exhibit of diapositives and roentgenograms representing the acute primary stage of coccidioides infection and the secondary stage of coccidioidal granuloma; diapositives showing the development of chlamydospores, which are the etiologic agent of the primary type, and of the endospores, which cause spread of the infection in coccidioidal granuloma; spot map of the incidence of valley fever, the local name for the primary form in the San Joaquin Valley, and a chart indicating the clinical course of the primary form.

EDWARD MATZGER, Southern Pacific Railroad Hospital, San Francisco, and LEROY ABRAMS, Stanford University, Palo Alto, Calif.:

Allergies in Railroad Workers—Methods Used in Control: Exhibit of mounted specimens collected in California, Oregon, Idaho, Arizona, Utah, New Mexico, Texas and parts of northern Mexico; charts indicating the chronology of pollination at various centers of population; charts indicating abundance of plants and relative amounts of pollen produced; microscopic demonstration of pollens; charts classifying nine years of clinical allergic studies in 1,234 patients; factors of the seasonal and perennial groups, methods of treatment, importance of botanic data to seasonal complaints, and therapeutic results.

HERMANN SOMMER and K. F. MEYER, Hooper Foundation, University of California Medical Center, San Francisco:

Plankton and Paralytic Shellfish Poisoning: Exhibit showing (1) distribution of the disease; (2) epidemiology along the Pacific Coast from Alaska to Los Angeles, correlated with laboratory observations; (3) cultures of the poisonous plankton; (4) marine aquarium with three kinds of shellfish involved; (5) symptoms in animals and man with treatment and prevention.

S. E. GOULD, Eloise Hospital, Eloise, Mich., and Wayne University College of Medicine, Detroit, and I. FOREST HUDDLESON, Michigan State College, East Lansing, Mich.:

Undulant Fever (Brucellosis): Exhibit of models and transilluminated photographs and diagrams, illustrating (1) the sources and methods of spread of human infection; (2) fever charts and anatomic location of disease in acute and chronic cases; (3) diagnostic methods, including intradermal brucellergin test, rapid agglutination test, opsonic test and culture, and (4) methods of control of infection and effect of treatment with brucellin.

JOSEPH FELSEN, New York:

Prevention, Diagnosis and Treatment of Acute Bacillary Dysentery: Exhibit showing (1) epidemiologic studies, the prevention and control of institutional and hospital outbreaks, educational program for the public in the prevention and control of diarrheal disease, recognition of the new forms of bacillary dysentery by the family physician, mass vaccination; (2) typical and atypical cases of acute bacillary dysentery, the diagnostic laboratory triad, the characteristic three-stage pathology; (3) principles of therapy, different methods of therapy for each of the three stages of acute bacillary dysentery, use of vaccine to prevent the chronic phase of the disease.

Section on Urology

The representative to the Scientific Exhibit from the Section on Urology is R. S. Ferguson, New York.

WIRT B. DAKIN, Los Angeles:

Foreign Bodies in the Urinary Bladder: Exhibit of a large number of foreign bodies found in the urinary bladder, together with descriptions of each case and a review of the literature.

HENRY SANGREE, Philadelphia, and ROBERT HOTCHKISS, Cornell Medical Center, New York:

Fertility in the Male, Clinical and Surgical Treatment: Exhibit of charts, models and photographs of congenital anomalies and endocrine disturbances; colored drawings, photomicrographs and microscopic slides portraying normal and abnormal sperm, together with a complete analysis of cases treated; motion picture in color illustrating the operation of epididymovasostomy, the various anatomic and inflammatory conditions causing infertility in the male and photomicrography showing the action of normal and abnormal sperm in various mediums.

HENRY A. R. KREUTZMANN, M. L. POLSE and BERNARD STRAUSS, San Francisco:

Anatomy of the Intramural Portion of the Normal Ureter: Exhibit showing the intramural portion of the ureter, adjacent bladder wall and trigon sectioned and various stains of these sections showing the muscles, nerves and connective tissue in this region. The true relationship of the various structures is depicted by means of a transparency case and also by dissections.

ROGER W. BARNES, Los Angeles:

Embryology of the Prostate: Exhibit consisting of models of the prostate of the human fetus ranging in age development from twelve weeks to term; photomicrographs of cross sections and longitudinal sections of the prostate, and a fetus representing the age at which each model is made.

ROBERT A. MACARTHUR, Detroit:

Hematuria: Exhibit of transparencies illustrating practically all the pathologic conditions causing hematuria throughout the genito-urinary tract; these conditions are demonstrated by means of roentgenograms, cystograms, pyelograms, drawings, cystoscopic views in color and colored photographs.

Section on Orthopedic Surgery

The representative to the Scientific Exhibit from the Section on Orthopedic Surgery is Norman T. Kirk, San Francisco.

PHILIP LEWIN, Chicago:

Newer Conceptions and Methods of Teaching Orthopedic Surgery to Undergraduate Students: Exhibit of translites, roentgenograms and anatomic models dealing with the embryology, development, anatomy, physiology and chemistry of orthopedic structures and illustrating congenital defects, deformities and disabilities of developmental, nutritional, postural, paralytic, infectious, myogenic, neurogenic, traumatic, fibrogenic, vascular and neoplastic origins.

FRANK A. LOWE, San Francisco:

Congenital and Acquired Clubfeet, Manipulation and Surgical Models: Exhibit of models of clubfeet before and after correction; motion pictures of cases before and after treatment;

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various methods of moleskin adhesive traction for fracture treatment; sand-bag weight and pulley for fractured femurs.

LEROY C. ABBOTT, F. C. BOST and JOHN B. SAUNDERS, San Francisco:

Leg Lengthening and Fractures of the Hip: Exhibit illustrating the anatomy and operative technic of the lengthening of the tibia and fibula by means of charts, drawings, photographs, anatomic dissections, x-ray transparencies and apparatus; dissections showing the main features of the anatomy of the leg and of the actual operation; apparatus illustrating its historical development; fractures of the neck of the femur demonstrated by dissections and x-ray transparencies.

K. K. SHERWOOD, Seattle:

Management of Chronic Arthritis: Exhibit of photographs, roentgenograms and charts, emphasizing (1) the importance of the complete diagnosis in all cases of chronic arthritis; (2) the value of laboratory tests, especially vitamin C determinations and sedimentation and cell volume studies; (3) that roentgenograms should be used in ruling out disease other than arthritis and in giving a prognosis but not as a means of making the diagnosis; (4) the importance of general therapeutic measures (rest, diet, symptomatic medication, physical therapy, orthopedic measures and psychotherapy); the importance of dividing atrophic and hypertrophic arthritis into small groups presenting the same clinical syndromes.

L. D. SMITH, Milwaukee:

Mechanics, Treatment, Internal Fixation of Cervical Fracture of the Femur: Exhibit of model of pelvis and hip joint showing the action of muscles on the joint and on the neck of the femur; method of reduction demonstrated; human specimens showing the anatomy of the hip in relation to its fracture and its treatment; films and slides of internally fixed hip fractures; instruments for inserting the four flanged spike, thus maintaining reduction in a fractured hip.

CHARLES MURRAY GRATZ, New York:

Fascial Adhesions in Low Back Pain and Arthritis: Exhibit dealing with fascial adhesions shown anatomically, radiologically and histologically; rationale of selecting cases in which fascial adhesions should be treated; result of treating fascial adhesions over a period of years; a new method of measuring limitation of motion of the back.

J. E. M. THOMSON and C. FRED FERCIOT, Lincoln, Neb.:

Surgical Treatment of Comminuted Fractures of the Patella: Exhibit of models, drawings and roentgenographic films demonstrating the advantages of surgical treatment of certain fractures.

DAVID H. KLING, Los Angeles:

Physiology and Pathology of Synovial Membrane and Synovial Fluid: Exhibit of photographs, tables and descriptions of precipitation phenomena of synovial mucin; comparative sedimentation; bilirubin content of joint effusions; fat in traumatic effusions; enlargements of photomicrographs showing the cytology of joint effusions in different types of arthritis; photomicrographs showing systematic method of dissection of the knee joint, which demonstrates variations of structure and function.

C. HOWARD HATCHER and PETER M. WASBOTTEN, University of Chicago Clinics, Chicago:

Correlation of Pathologic and Roentgenologic Characteristics of Skeletal Diseases: Exhibit of histologic preparations demonstrating the pathologic characteristics of various bone and joint diseases with x-ray transparencies correlating the pathologic and roentgenologic observations, accompanied by colored photomicrographs; panels are prepared illustrating bone tumors, tuberculous arthritis, chronic nontuberculous arthritis, osteomyelitis and aseptic necrosing lesions of bone.

RALPH SOTO-HALL and KEENE O. HALDEMAN, San Francisco:

Neurotrophic Joint Disease (Charcot Joint)—Its Development, Diagnosis and Treatment: Exhibit of roentgenograms which were studied to throw light on the causative factors. A statistical tabulation of the entire series of patients with neurotrophic joint disease indicating the relative value of clinical signs and laboratory aids in diagnosis; photographs, drawings and roentgenograms illustrating a new method for the operative fusion of Charcot joints in two stages.

S. L. HAAS, San Francisco:

Growth Changes in the Spine, An Experimental and Clinical Study: Exhibit showing that definite length growth changes in the vertebrae of animals takes place at the epiphysial plate; injuries to the epiphysial cartilage plates; comparative study of the growth changes in the vertebrae of man and of animals both by roentgenograms and by histologic study after fusion operations.

RUDOLPH SKARDA, University of California Medical Center, San Francisco:

Anatomicosurgical Preparations: Exhibit of a series of preparations of actual dissections prepared by a new technic, of value in teaching, in refreshing the surgeon on anatomic details and showing surgical approaches.

HENRY W. MEYERDING, Mayo Clinic, Rochester, Minn.:

Spondylolisthesis, An Etiologic Factor in Backache: Exhibit consisting of (1) roentgenograms illustrating site and extent of deformity and postoperative surgical fusion; (2) anatomic models in wax demonstrating defects and surgical treatment; (3) motion pictures illustrating various deformities encountered on inspection of the spine, extent of limitation of motion and phases of conservative and surgical treatment.

J. B. DEC. M. SAUNDERS, University of California Medical School, San Francisco:

Development and Growth of the Fetal Skeleton: Exhibit of fetal skeletons prepared by a new technic; charts, photographs and diagrams demonstrating inherent factors which control and determine characteristic form and structure; results of quantitative examination of growth changes in the bones; relationship of sidereal time to development; effect of predetermined growth rates as modifying skeletal form and proportion.

HENRY H. KESSLER, Newark, N. J.:

Rehabilitation of Industrial Amputation Cases: Exhibit of photographs of arm amputation cases including plaster models, prosthesis and motion picture demonstration.

Section on Gastro-Enterology and Proctology

The representative to the Scientific Exhibit from the Section on Gastro-Enterology and Proctology is J. A. Bargen, Rochester, Minn.

H. F. HANEY, Department of Physiology, University of Oregon Medical School, Portland:

Experimental Approach to Some Problems in Gastro-Enterology: Exhibit showing: I. Relation of extrinsic nerves to the function of the cardia, (*a*) diagram to show location of nerve sections, (*b*) diagram of balloon setup used in obtaining tracings, (*c*) tracings obtained. II. The use of chronic accessible closed intestinal loops in the study of absorption, (*a*) diagram of loop and method of entering loop, (*b*) preserved loop specimens, (*c*) sagittal section through closed loop and anterior abdominal wall with needle in place. III. A technic for end to end anastomosis of the small intestine, (*a*) diagram of operative procedure, (*b*) preserved specimens, (*c*) histologic picture at various stages in process of healing. Photomicrographs and sections.

STANLEY H. MENTZER, University of California Medical School, San Francisco:

Gallstones: Exhibit of gallstones of every known variety, without duplication, gathered from more than 40,000 specimens.

ALLAN J. HRUBY, LEO HARDT, JOHN S. COULTER, CLEMENT MARTIN, CARROLL COOK and KARL HENRICHSEN, Municipal Tuberculosis Sanitarium, Chicago:

Gastrointestinal Tuberculosis: Exhibit of roentgenograms and transparencies of gastrointestinal and pulmonary conditions, pathologic specimens and proctoscopic color photographs;

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charts summarizing the diagnosis and treatment of gastrointestinal tuberculosis; charts showing a study of diagnostic data that have been confirmed by postmortem examination; charts showing the results of a comparative study of the treatment of gastrointestinal tuberculosis.

WENDELL G. SCOTT, St. Louis:

Kymographic Studies of Gastrointestinal Movements: Exhibit of a series of diagrams and roentgen kymograms demonstrating the principle and method of roentgen kymography; films showing alterations in the peristaltic movements of the stomach in various diseases; motion picture demonstrating the peristaltic movements of the small intestine and colon.

DAVID J. SANDWEISS, H. C. SALTZSTEIN and A. A. FARBMAN, Detroit:

The Relation of Sex Hormones to Peptic Ulcer: Exhibit will consist of charts showing clinical data bearing on this subject. It will include mounted specimens of the stomach and jejunum of Mann-Williamson dogs showing the effect of various sex hormones on these experimental ulcers. The effect of these hormones on cinchophen ulcers will also be presented.

MALCOLM R. HILL, Los Angeles:

History of Illustration in Proctology: Exhibit consisting of reproductions and art drawings depicting the progress medical science has made in dealing with disease as related to proctology; the relative progress made in the art of illustration.

CLAUDE C. TUCKER and C. ALEXANDER HELLWIG, St. Francis Hospital, Wichita, Kan.:

Proctologic Tumors; Diagnostic Difficulties and Pathology: Exhibit of transparencies and pathologic specimens illustrating the different tumors in the anorectal region and showing that clinical differentiation between harmless lesions and malignant tumors is often impossible and routine histologic examination of all removed tissue is indicated.

FELIX CUNHA and FRED C. BLAKE, San Francisco:

Intragastric Photography and Its Clinical Application; Use of the Flexible Gastroscope in the Diagnosis of Gastric Lesions: Exhibit demonstrating camera used; actual method of taking snapshot and method of supplying current; cameras outlining principles maintained in construction and the principles of physics or optics involved in taking a photograph; source of generation of power for the lighting up of the stomach used in taking the photograph; gastroscope with charts showing the principle of physics involved, construction, and artists' drawings outlining various pathologic conditions encountered and easily differentiated; a motion picture demonstrating the entire technic of flexible gastroscopy.

Section on Radiology

The representative to the Scientific Exhibit from the Section on Radiology is E. E. Downs, Woodbury, N. J.

HARRY H. BOWING and R. E. FRICKE, Mayo Clinic, Rochester, Minn.:

Carcinoma of the Uterine Cervix: A Summary of Treatment and Results: Exhibit of charts and graphs showing (1) that the average age is 49, (2) epithelioma is the chief lesion (93.5 per cent), (3) a large majority of patients (84 per cent) had lesions of high grade malignancy (Broders), (4) a large number of the patients had inoperable lesions (93 per cent). (5) Results of treatment (five year cures): stage 1, 69.2 per cent; stage 2, 60.2 per cent; stage 3, 29.7 per cent; stage 4, 6.5 per cent. (6) Palliation occurs in all cases. (7) Hospital mortality of 1 per cent occurred entirely in the inoperable group. (8) The three year cure rate shows improvement after more complete treatments were given. (9) Technic of the radium and roentgen therapy as outlined for an average case with a stage three involvement with universal tube applicator, size, amount of radium and filtration; the treatment time, intervals between applications and length of course in days, near or at the end of the radium treatment, roentgen therapy given as outlined; (10) reexaminations are done at three month intervals for the first year, at six month intervals the second year and every year thereafter.

JAMES F. KELLY and D. ARNOLD DOWELL, Omaha:

Roentgen Treatment of Acute Peritonitis and Other Infections with Mobile Apparatus: Exhibit illustrating the advantages of a specially designed mobile therapy apparatus to be used at the bedside in the treatment of serious acute infections such as peritonitis, gas gangrene, pneumonia, surgical mumps, Ludwig's angina, erysipelas and other infections; clinical data of many cases treated with this apparatus as well as the technic and advantages and indications for its usage.

H. O. MAHONEY, Oak Park, Ill.; B. J. ANSON and ROY F. DENT, Northwestern University Medical School, Chicago:

Study of Sectional Anatomy by Means of the Roentgen Ray: Exhibit demonstrating the preparation of sections and the technic employed in roentgenographing them; representative selection of roentgenograms of sections showing advantages which roentgenography provides in the study of sectional anatomy.

RICHARD DRESSER, Boston:

Million Volt Roentgen Therapy: Exhibit of photographs of the electrostatic belt-conveyor generator developed at the Massachusetts Institute of Technology; data in the form of charts and graphs regarding the physical properties of million volt roentgen rays; data regarding immediate clinical results.

HENRI COUTARD and MAX CUTLER, Chicago Tumor Institute, Chicago:

Carcinoma of the Larynx—Diagnosis and Radiation Treatment: Exhibit containing illustrations classifying the various forms of laryngeal carcinoma, demonstrating methods of diagnosis and indicating their radiologic treatment.

WILLIAM E. HOWES, Brooklyn:

Planigraphy: Exhibit of drawings to demonstrate the principles of planigraphy; series of transparencies showing roentgen ray films and planigraphic films in the same case, including foreign body in the mediastinum, precollapse and postcollapse tuberous cavities, mediastinal tumors, metastatic lung tumors, roentgen ray pleural pulmonitis and other conditions.

EDUCATIONAL CLASSIFICATION

Government and National Organizations

The educational exhibits include those exhibits from national and state organizations and government institutions which are put on in the name of the institution rather than of individuals and which are intended to show progress in the particular activities with which those institutions deal.

These exhibits are not open to medal awards, but a special certificate of merit is presented to the best exhibit in this classification.

UNITED STATES NAVY, San Diego, Calif.:

Medical Department, U. S. Navy: Exhibit showing medical equipment and practice in hospitals, aviation, submarines and marine corps.

CHILDREN'S BUREAU, U. S. DEPARTMENT OF LABOR, Washington, D. C.:

Safe Home Delivery: Exhibit of bed and other equipment for aseptic technic used in home delivery; charts showing number and percentage of live births occurring in the hospitals and homes in urban and rural areas; charts showing number and percentage of urban and rural births delivered without a physician; poster material for adequate hospital equipment for serious complications of childbirth; essentials for safe home delivery.

AMERICAN HEART ASSOCIATION, New York:

Exhibit of educational material including books, pamphlets and leaflets on various phases of cardiovascular disease.

AMERICAN HUMAN SERUM ASSOCIATION, Los Angeles:

Convalescent Human Serum: Exhibit of charts showing series of cases treated and protected with the various convalescent serums; display of the various types of convalescent serums both liquid and dried; demonstration of new apparatus used in the handling of human convalescent serum.

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AMERICAN PHYSIOTHERAPY ASSOCIATION, Berkeley, Calif.:

Your Physical Therapy Technician—Schools, Training, Therapy: Exhibit showing physical therapy schools on an animated map; posters showing the theory and practical courses required in the approved schools; cartoons entitled "All in the Day's Work."

NATIONAL TUBERCULOSIS ASSOCIATION, New York:

Diagnosis of Tuberculosis: Exhibit of charts and roentgenograms illustrating the difficulty of making diagnoses of pulmonary tuberculosis unless the roentgen ray is used.

UNITED STATES PHARMACOPEIA, San Francisco.

Exhibit illustrating methods for determining the hydrogen ion concentration of some official products; the preparation of buffer solutions and their application; demonstrations of official products used in ophthalmic and dermatologic practice, and a special exhibit of the official ointments.

AMERICAN SOCIETY FOR THE CONTROL OF CANCER, New York:

Exhibit of charts and diagrams showing the objectives and progress of the Women's Field Army since its inception; summary of educational and organization activities.

AMERICAN PHARMACEUTICAL ASSOCIATION, Washington, D. C.:

National Formulary Preparations: Exhibit of National Formulary preparations of interest to prescribing physicians; examples of preparations of therapeutic importance representing convenient and satisfactory dosage forms, and of vehicles designed to aid the physician in prescribing attractive and palatable prescriptions.

ADVISORY BOARD FOR MEDICAL SPECIALTIES, Pittsburgh:

Exhibit of charts, graphs and literature describing the work of the Advisory Board for Medical Specialties and of the examining boards for certification in medical specialties, including the American Boards of Ophthalmology, of Otolaryngology, of Obstetrics and Gynecology, of Dermatology and Syphilology, of Pediatrics, of Psychiatry and Neurology, of Radiology, of Orthopaedic Surgery, of Urology, of Pathology, of Internal Medicine and of Surgery.

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS, New York:

Prevention of Blindness—A Public Health Program: Exhibit of charts, illustrative material and motion pictures pertaining to the various aspects of sight conservation from the public health point of view; namely, antepartum care, care of the eyes at birth, vision testing, venereal diseases and eye health, eye conditions in midlife and later, and material on the causes of blindness.

NATIONAL BOARD OF MEDICAL EXAMINERS, Philadelphia:

Exhibit of charts describing the work and progress of the National Board of Medical Examiners, including graphic presentation of the results of its examinations.

AMERICAN SOCIAL HYGIENE ASSOCIATION, New York:

Syphilis in Pregnancy and the Prevention of Congenital Syphilis: Exhibit of photographs, transparencies, specimens, charts and graphs showing the pathology of syphilis in pregnancy, its diagnosis and treatment, and the prevention of congenital syphilis.

AMERICAN COLLEGE OF CHEST PHYSICIANS, Monrovia, Calif.:

Results of Collapse Therapy in Pulmonary Tuberculosis: Exhibit of roentgenograms showing pictures of the chest before and after instituting collapse therapy; plates illustrating artificial pneumothorax, phrenicotomy, pneumolysis and thoracoplasty; placards describing each of the plates and the various operations.

AMERICAN SOCIETY OF CLINICAL PATHOLOGISTS, Registry of Medical Technologists, Denver:

Exhibit of charts teaching the importance of employment by hospitals and physicians of properly trained medical technologists; charts giving data regarding approved training schools; descriptive literature; blank forms.

EXHIBITS OF ORGANIZED MEDICINE

The exhibits from the California Medical Association, Indiana State Medical Association and the headquarters group of the American Medical Association cover various activities of organized medicine.

CALIFORNIA MEDICAL ASSOCIATION:

Organizational Activity: Exhibit of charts, photographs and graphs demonstrating some fifteen diversified organizational activities of the California Medical Association together with the work of special committees and councils and also representation of the distribution of membership in the several councilor districts of this great state.

CALIFORNIA MEDICAL ASSOCIATION, CANCER COMMISSION:

Cancer, Its Diagnosis and Treatment: Exhibit of photographs, roentgenograms and pathologic specimens illustrating the problem involved in the diagnosis, treatment and prevention of cancer from the standpoint largely of the general practitioner, stressing importance of early diagnosis and possibility of cure in the common forms if diagnosis is early and proper treatment instituted.

INDIANA STATE MEDICAL ASSOCIATION, BUREAU OF PUBLICITY AND THE EXECUTIVE COMMITTEE, Indianapolis:

An Antidote for State Medicine—the Preventive Medical Health Program of the Indiana State Medical Association: Exhibit of charts, maps, models and plans describing and depicting the Indiana program; copies of the *Journal of the Indiana State Medical Association* showing how physicians of the state are kept informed with regard to the program, and copies of releases from the Bureau of Publicity showing how the public is kept informed; literature prepared by the Bureau of Publicity.

AMERICAN MEDICAL ASSOCIATION:

Council on Foods: Exhibit outlining various phases of the Council's activities; charts of food values in terms of dietary essentials; publications of the Council on the nutritional significance of foods and on normal and therapeutic diets.

AMERICAN MEDICAL ASSOCIATION:

Council on Physical Therapy: Exhibit consisting of apparatus, models and charts demonstrating certain fundamental physical principles of physical agents; models showing layout of physical therapy departments for hospitals with fifty, 200 or 300 beds and over; charts portraying the recent accomplishments of the Council on Physical Therapy.

At stated intervals, the following motion picture films will be shown:

Aids in Muscle Training.

Occupational Therapy.

Underwater Exercises.

Effects of Heat and Cold on Circulation of Blood.

Effects of Massage on Circulation of Blood.

Therapeutic Exercise for the Shoulder Joint Following Dislocation.

Contraction of Arteries and Arteriovenous Anastomoses.

Treatment of Compression Fracture of the First Lumbar Vertebrae.

AMERICAN MEDICAL ASSOCIATION:

Council on Medical Education and Hospitals: Exhibit of statistics, diagrams and maps dealing with medical education, medical licensure and hospitals; publications of the Council, including essentials and revised lists of hospitals approved for residencies in specialties, hospitals approved for intern training, schools for laboratory technicians, schools for physical therapists, and schools for occupational therapists.

AMERICAN MEDICAL ASSOCIATION:

Bureau of Legal Medicine and Legislation: Exhibit showing effectiveness of basic science laws in preventing the licensing of incompetent practitioners; posters relating to legal medicine and legislation.

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The TECHNICAL EXPOSITION

A Panorama of Medical Progress

● The importance of the Technical Exposition to the medical profession is well demonstrated by the importance which the exhibitors themselves attach to it. Whether the locale is on the Eastern Seaboard, in the Middle West, or on the Pacific, one will invariably find most of the representative medical firms present with carefully planned exhibits and a capable staff of attendants. This year the Exposition in San Francisco will be true to type. It will include some 200 firms, occupying a total of almost 50,000 square feet in the great hall of the San Francisco Auditorium.

● In this vast array of products and services needed in the every-day practice of medicine, the physician will find a definite educational stimulus. It will, in truth, be a vivid panorama of "What's New and Useful to the Physician?" On every hand will be evidence of forward strides in research, important technical advances, improvements in standard products and services.

● The whole spirit of this great gathering will be one of service and courtesy. At every booth the physician will find well qualified representatives eager to discuss questions of mutual interest. He will discover that the principal aim of the exhibitor is to tell an interesting, informative story. Every display will have some special features worthy of careful study, whether it be pharmaceuticals and biologicals, medical books, instruments, apparatus, electrical equipment, dietetic products, or specialized services. Visitors are urged to take full advantage of the educational opportunities offered by the exhibits and visit them repeatedly.

● The Technical Exposition is located in close proximity to the Registration, the Postoffice and the Scientific Exhibits and will be a convenient place to meet friends or spend the time before, after, or between meetings. It will be open from 8: 30 A. M. to 6: 00 P. M. each day, closing Friday at noon.

Will C. Braun
Superintendent of Exhibits.

APPARATUS and INSTRUMENTS

INCLUSIVE ALOE DISPLAY

The new Radcliff retractor, the DeBakey blood transfusion unit and other instruments and equipment will be shown by A. S. Aloe Company in Booths 97, 98 and 99. A feature will be the display of Aloe Steeline modern treatment room furniture, in a full color range; also physical therapy equipment, including the new Aloe X-ray and the Aloe short wave unit. In Booth 140 the company will show a complete line of clinical laboratory equipment. See page 96.

INFUS-O-THERM DEMONSTRATIONS

At Booth 18 the American Medical Specialties Company will exhibit the Infus-O-Therm, an instrument that permits blood temperature at needle point during intravenous infusion. Demonstrations will be given to show how a control dial gives any heat degree at a "drop per minute" rate, assuring the solution entering the vein at blood temperature, under constant heat control. The new Amsco Oscillometer will also be demonstrated. See page 60.

AMERICAN STERILIZER DISPLAY

The American Sterilizer Company will exhibit, in Booth 116, an improved design of the 1065 head end controlled surgical operating table, to be displayed in conjunction with an American Luminaire Surgical Light. There will also be shown a small pressure steam sterilizer, arranged for temperature control with the newly developed American Vacuum Drier, intended to facilitate the drying of dressings and to eliminate the escape of steam into the sterilizing room. In addition, a new office type electric instrument sterilizer will be demonstrated.

NEW CASTLE ITEMS WORTH SEEING

At the Wilmot Castle exhibit, Booth 77, there will be on display several pieces of apparatus, brand new in idea and purpose. Surgeons, particularly, will want to be sure to visit the Castle booth. See page 70.

(Continued on next page)

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NEW HEMATOLOGICAL CASE

Bard-Parker products to be exhibited at Booth 120 include Rib-Back blades, stainless steel renewable edge scissors, Lahey Lock forceps and the new B-P hematological case. This case for obtaining bedside blood samples for red, white and differential counts has several novel features, including correction factor pipettes, stainless steel, sterile lancet and special vials for diluting fluids. See page 102.

BARD-PARKER B-P TRADE MARK

TO SHOW HOW SYRINGES ARE MADE

Becton, Dickinson & Company will occupy spaces 35-39. Here a complete line of products will be shown, grouped according to fields of practice. In addition to this complete display of syringes, needles, Asepto syringes, thermometers, Ace bandages, diagnostic instruments and general utility items, a demonstration of glass syringe making and thermometer blowing will be presented daily. Trained technical men will be in attendance at all times to answer questions concerning instruments displayed. See page 79.

ORTHOPAEDIC AND X-RAY TABLE

The Bell Fracture orthopaedic and x-ray table will be exhibited in Booth 20. Several new features will be stressed, including the new Hitchcock two blade sacral rest. A live model will be used to show the various positions and adjustments of the table. The Bell Wire Gun and several other interesting bone instruments will also be shown. See page 92.

OF INTEREST TO BONE SURGEONS

The DePuy Manufacturing Company will present new Vitallium items for bone work in Booth 22—flanged screws, Sherman plates, Venable type plates, Smith-Peterson nails, and White Tyne nails. Pick-up screws, fixation screws and ordinary nails for treatment of fractures in the senile will be on display. Also, the new combination Padula stretcher and hyperextension table for handling injured backs; and the Carl P. Jones Well Leg splint for treatment of hip fractures. See page 106.

SEE THE DEVILBISS DISPLAY

The complete DeVilbiss line of atomizers, steam vaporizers and nebulizers will be shown in Booth 182. Specially featured will be illustrations, based on X-ray research, graphically depicting the coverage afforded by the atomizer in the application of solutions to the nose and throat. Copies of the illustrations for reference may be secured from the representative in charge.

AIDS TO BETTER HEARING

Acousticon extends a cordial invitation to all physicians to visit Booths 239 and 240, where the firm will display its latest scientific developments — the Acousticon Auroguage, which permits the selection of the Acousticon assembly best suited to the patient's hearing requirements; the Coronation Acousticon; and the Acousticon Crystal Acoustiscope, which employs the cathode ray principal used in television, permitting the patient to "see what he hears."

MECHANICAL RESUSCITATION

A study which appeared in the April Surgery, Gynecology and Obstetrics, on "Mechanical Resuscitation in Advanced Forms of Asphyxia," will be featured in connection with exhibit of the E & J Resuscitator, Booth 262. The paper gives an account of animal experiments in asphyxia at Cornell Medical Centre and also of clinical results obtained in the treatment of advanced asphyxia with the E & J Resuscitator. See page 108.

PNEUMATOLOGY APPARATUS

Means for the administration of helium in oxygen therapy, as well as anesthesia, is one of the new items of pneumatology which will be displayed in Booth 4 by the Foregger Company, Inc. See page 74.

NEW SUCTION AND PRESSURE UNIT

The Gomco Surgical Manufacturing Corporation, Booth 143, will display their new hospital suction and pressure unit with stainless steel cabinet. Physicians are invited to note particularly the remote control attachment, which permits the entire pump unit to be placed a distance away from operating table, allowing the entire ether output to be controlled by the small remote control unit. See page 74.

HEIDBRINK GAS MACHINE

The Heidbrink Kinetometer gas machines, equipped with two chambered carbon dioxid absorbers for maximum economy in the use of some of the new anesthetic gases, will be on display in Booth 180. Also to be shown are new improved oxygen therapy units such as the combination motor-motorless oxygen tents and the nasal tube inhaling device.

NEW TYPE BED PAN

In Booth 231 the Jones Metal Products Company will exhibit their modern "Relax" Bed Pan, which, because it is scientifically designed, permits easy roll-on placement and provides more comfort for the patient, as well as greater convenience for the nurse.

"BABY-ALL" EQUIPMENT

In Booth 241 there will be demonstrated a miniature low-priced formula room for the baby at home; also, a new development known as the All-Nite Vaporizer-Humidifier, which provides medicated or plain vapors continuously for 12 hours or less. See pages 76 and 82.

MacGREGOR INSTRUMENT DISPLAY

A visit to Booth 173 of the MacGregor Instrument Company will give you an opportunity to examine the complete line of Vim products. In addition to Vim needles of Firth-Brearley stainless steel and Vim emerald syringes, there will be a full display of the new Vim "Steri-Tectors," Vim Needle-Tainers and Vim Carry-Alls. Surgeons are especially invited to see the Vim exhibit of Iron Arm surgeons' needles.

VIM

INSTRUMENTS FOR THE SPECIALTIES

The V. Mueller & Company exhibit, Booths 72-73, will cover highlights in the various fields of surgery. A large section will be devoted to the latest developments in ophthalmic instruments, as well as those for ear, nose, throat and plastic work. Instruments and equipment representing the strides made in orthopedic, urological and general surgery will be displayed; also modern ether-vapor and vacuum apparatus and other equipment. See page 100.

MODERN SURGICAL LIGHTS

At Scanlan-Morris Company's exhibit, Booth 236, demonstrations will be given of modern surgical illumination with Operay Multibeam and Operay Surg-O-Ray lights, which are now equipped with new type twin-filament projection lamps to give a selection of intensity and provide a safeguard against "lights out" hazards. The Scanlan-Balfour general operating table and its adaptability to the newer surgical techniques will also be featured.

SUCTION AND PRESSURE APPARATUS

The Sklar Manufacturing Company exhibit, Booth 95, will feature the new, improved, heavy duty hospital model of the Bellevue Suction and Pressure Unit. It will also include the complete line of Sklar suction and pressure units, as well as the Tompkins' Portable, Moorhead, Ralks' Ideal and other pumps for clinic and office use. See page 96.

HEARING AID DEMONSTRATIONS

Recent developments in electrical hearing aids, technique of individual fitting, and audiometers will be demonstrated at the Sonotone Corporation Booth, 215. An unusual demonstration of how speech and music sounds to persons with different types of hearing impairment will be conducted by means of special phonograph recordings played through bone and air conduction receivers. Also demonstrated will be the Sonotone Audiometer, a noteworthy high precision instrument.

DIAGNOSTIC EQUIPMENT

BAUMANOMETER TO BE FEATURED

The exhibit of the W. A. Baum Company, Booth 165, will show the latest Kompak Model Lifetime Baumanometer, with many exclusive features, including the completely recessed cartridge tube. The ever popular desk and wall models will also be prominently displayed. A new one-piece rubber bulb made of highest quality Latex, another important improvement to the Baumanometer, will be awaiting your critical examination. See page 27.

ELECTRICAL INSTRUMENTS

The new Lenpert-LeMee Headlite will be demonstrated in Booths 177 and 229 by Cameron Surgical Specialty Company. Latest developments in electrically lighted diagnostic and operating instruments for all parts of the body will also be shown. Of special interest will be the new inexpensive office model of the radio knife and other electrosurgical units for cutting, coagulation, desiccation and fulguration, ranging in size up to the hospital model for the most radical and heavy surgery. See page 45.

LIST OF EXHIBITORS

Name	Aisle	Booth No.
Abbott Laboratories	G	103-104
Agfa Ansco Corp	J	68-69
Allison Co., W. D	J	55-56
Aloe Co., A. S	H-F	97-98-99-140
American Can Co	K	52-53
American Inst. of Baking	Corr	185
American Medical Assn	G	107-A
American Medical Spec. Co	L	18
American Optical Co	D	205-205-A-206
American Safety Razor Corp	B	246
American Seating Co	Corr	176-178
American Sterilizer Co	G	116
Appleton-Century Co	K	44
Arden-Rayshine Co	C	230
Arlington Chemical Co	E	153
Armour Laboratories	E-D	166-190
Austral Sales Corp	A	266
Avocations Magazine	A	264
Aznoe's Nat. Phys. Exc	J	70
Bard-Parker Co	F	120
Bauer & Black	K	50
Baum Co., W. A	E	165
Bausch & Lomb Optical Co	D-C	202-232
Baxter, Inc., Don	J	2
Becton, Dickinson & Co	K	35-36-37-38-39
Bell & Howell Co	L	16
Best Foods, Inc	D	194
Bilhuber-Knoll Corp	H	96
Bo-Peep Cuffs & Sleeves	D	195

CAMBRIDGE CARDIAC APPARATUS

The Cambridge Instrument Company will exhibit two new instruments in Booth 119—the Simpli-Trol Portable Model Electrocardiograph, which weighs only 30 pounds complete, and the Portable Electrocardiograph-Stethograph, which permits the taking of the electrocardiogram and stethogram consecutively on the same instrument. Other Cambridge cardiac diagnostic instruments will also be shown. See page 86.

CONSTANT SPEED CENTRIFUGE

The new "Gyro" constant speed centrifuge, with uniform timing, will be shown at Booth 200. In addition to demonstrations of the quiet, dependable performance of this standard comparative instrument, the Electric Manufacturing Company will have on display the Gyro graduated molded "Lucite" tubes, which are unbreakable, with no variation in weight or content.

A STOMACH CAMERA

For the first time on the Pacific coast the Gastro-Photor, a camera for photographing the interior of the stomach, will be shown by Gastro-Photor Laboratories in Booth 128. A large number of stomach photographs, normal and pathological, obtained with this tiny camera will be on display, and competent men will be in attendance to give complete information regarding this ingenious instrument. See page 98.

ELECTRICAL STETHOSCOPE

The Graybar Electric Company, national distributors of Western Electric scientific equipment, will feature instruments of interest to the medical profession, such as the electrical stethoscope, in Booth 130. The background of the booth will emphasize the nation-wide service that Graybar renders. It will show a large map of the United States with each of the 85 cities where Graybar offices are located indicated by an electric bulb.

JONES METABOLISM EQUIPMENT

The Jones Metabolism Equipment Company, in Booth 118, will feature as their display the Jones Motor Basal, the Super Basal, and the Automatic nitrogen-determination metabolism equipment. A special feature of the metabolism equipment is that it contains no water and requires no calculation in the determination of the BMR. Another special feature of the display is the new method for determining the "normal" from the nitrogen metabolism. The Super Basal is an apparatus adjustable to the size of the patient. See page 87.

MUSCLE TESTING

New methods in nerve and muscle testing will be featured in the exhibit of Lindquist diagnostic and therapeutic apparatus. Of particular interest to the neurologist and the physical therapist will be the demonstration of Chronaxia, the newest method of electro-diagnosis. The new direct-reading automatic Chronaximeter, and the Chronowave low voltage generator will be featured. The manufacturer will be present to explain the operation of the new instruments. Booth 217.

METABOLISM AND CARDIOGRAPHY

Three outstanding new developments in modern diagnostic apparatus will be shown at Sanborn Company's booth, No. 82. The new Sanborn waterless metabolism tester, companion to the famous water-sealed Model E-I-S, will be exhibited. Both models will be on view. The latest Cardiette achievement—automatic elimination of "AC" interference in heart records made by this portable electrocardiograph, will be demonstrated. Developments in a new combination cardiograph-stethograph, providing an electrocardiogram, stethogram (heart sound record) and amplified heart sound for auscultation, are also planned to be shown. See page 29.

SEE THIS ANIMATED DISPLAY

The animated display of the Taylor Instrument Companies in Booth 49 will show how Tycos blood pressure instruments operate. Also don't miss the mechanical hammer which proves the durability of the glass tube in the Tycos mercurial manometer. The new "flat glass" Taylor Binoc fever thermometer will be displayed, along with the Pavaex unit, the famous "glass boot" for treating circulatory diseases of the extremities.

CERTIFIED Tycos INSTRUMENTS —10-Year Guarantee

BODY CAVITY INSTRUMENTS

At Booth 183 you can inspect the new Welch Allyn bronchoscopes; interesting developments in rectal instruments shown for the first time, and laryngoscopes representing important advances in construction. A complete line of dependable instruments for diagnosis in all body cavities will be presented.

WHY EAT BREAD?

In Booth 185 the department of nutrition of the American Institute of Baking will have a display showing why good bread is an economical and reliable source of abundant and easily digestible food-energy. Scientific literature accepted by the Council on Foods of the American Medical Association, describing the proper place of white bread in normal and reducing diets, will also be available. See page 55.

NEW NUCOA EXHIBIT

Doctors attending the Convention who would like to learn more about New Nucoa are cordially invited to visit the Best Foods booth (No. 194) and taste this wholesome spread for bread. An interesting series of photographs, stressing the wholesome conditions under which New Nucoa is manufactured, will show how New Nucoa is made. The exhibit will feature the recent addition of Vitamin A to the product. See page 110.

New NUCOA

BORDEN'S 81st YEAR

A warm welcome awaits all physicians at the Borden Booth, No. 54. Competent representatives will gladly provide information on Borden products, notably Dryco, Special Dryco, Klim, Beta Lactose, Merrell-Soule Prescription Products and Borden's Irradiated Evaporated Milks. See page 24.

EASY WAY TO STRAIN FOODS

In Booth 208 the Foley Manufacturing Company will demonstrate how easily and quickly fresh cooked vegetables and fruits are mashed or strained with the Foley Food Mill, made of steel, rust-proof, acid-proof, and easy to clean. It will be shown in three sizes.

DIETETIC PRODUCTS

AMERICAN CAN EXHIBIT

All registrants at the Convention are cordially invited to call at Booths 52 and 53, where information will be available concerning those aspects of commercially canned foods which are of greatest interest to the medical profession. Literature on canned foods, designed specifically for the physician's use, will also be on display.

CARNATION EXHIBIT

Some little-known factors in evaporated milk quality will be emphasized in the Carnation Company's exhibit, Booths 45-46. The display will show how the Carnation experimental farms are developing high-producing stock to improve the herds supplying its evaporating plants, and the work of Carnation "field men" in supervising raw-milk sources to insure a constant supply of clean, fresh milk. The scientific processing of Irradiated Carnation Milk will also be illustrated. See page 72.

CLAPP'S CHOPPED FOODS

Harold H. Clapp, Inc., will show their newly developed line of Chopped Foods for young children at Booth 129. The display will consist of 8 varieties of vegetables, soups and fruits, which, coarser in texture and providing more roughage than strained foods, are a valuable contribution to the control of nutrition in early childhood. See page 61.

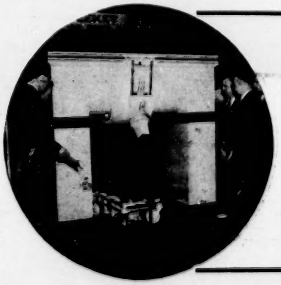
HAVE A CUP OF SANKA COFFEE

At Booth 17 you will be served with a cup of delicious Sanka Coffee, which is a choice blend of Central and South American coffees from which 97% of the caffein has been removed. The new drip grind as well as regular grind of Sanka will be on display, together with other General Foods products of interest to physicians. See page 35.

DRIP GRIND SANKA COFFEE

STRAINED FOODS FOR INFANTS

Gerber Products Company cordially invites you to visit Booth 89 and inspect their strained foods on display. Literature for professional use only and also some for distribution to mothers or adult pa-



LIST OF EXHIBITORS

Name	Aisle	Booth No.
Borden Co., The	J	54
Buck X-Ograph Co.	Corr.	179
Burdick Corp., The	E	156-157
Calco Chemical Co.	K	41
Cambridge Instrument Co.	F	119
Cameron Surg. Spec. Co.	Corr.-C	177-229
Camp & Co., S. H.	D	199-199-A
Carnation Co.	K	45-46
Cash, Inc., J. & J.	E	146
Castex Laboratories	C	230
Castle Co., Wilmot	L	77
Cayo Co.	K	47
Chappel Bros., Inc.	E	151
Chick, Gilbert Hyde	L	20
Ciba Pharm. Products	L	12-13
Church & Dwight Co.	G	102
Cilkloid Surg. Dress. Co.	Bet. C & D Ad. to 224	224-A
Clapp, Inc., Harold H.	F	129
Collins, Inc., Warren E.	L	5
Coop. Med. Adv. Bureau	G	107-A
Cutter Laboratories	G	105
Davies, Rose & Co.	Corr.	172
Davis Co., F. A.	G	115
Davis & Geck, Inc.	K	48
Day's Ideal Baby Shoe Co.	G	111
De Forest Laboratories	B	247
DePuy Mfg. Co.	L	22

V 11 1938

tients on therapeutic diets will be exhibited, and on request will be sent you later. See page 97.

GOLDEN GATE MACARONI

All of the fine semolina and egg noodle products of the Golden Gate Macaroni Company will be displayed at Booth 210. Especially featured will be "Fancy Pastino," a new special fine-grain type of macaroni product recommended by the firm for use in the diet of invalids and children.

COOL PINEAPPLE JUICE

Dole pineapple products from Hawaii will be represented at Booth 193. Here convention guests will be served a cool, soothing drink of pure unsweetened Dole Pineapple Juice. A colorful reminder of glamorous Hawaii itself will be featured, the display including a pictorial presentation of Hawaiian scenes plus a slide film showing the growth of pineapple and the packing of canned Hawaiian Pineapple and Pineapple Juice. See page 114.

HEINZ STRAINED FOODS

In order that you may see the natural fresh color and uniform consistency of Heinz Strained Foods, their display will present, in an attractive manner, all 12 varieties. A representative will be present to answer questions, and a copy of the fifth edition of their Nutritional Chart will be sent to physicians who register at the exhibit in Booth 141. See page 113.

LITERATURE FOR PHYSICIANS

Reports of clinical research on the use of Irradiated Evaporated Milk in infant feeding, treatment of milk allergy and dietary management of peptic ulcer will be available at Booth 152; also free manuals of instruction giving formulas for milk mixtures and recipes for low-cost family feeding. The new Sweeny and Buck monograph on "How to Feed Young Children in the Home" will be shown, and you can easily arrange for complimentary copy.

MOTION PICTURES TO BE SHOWN

Mead Johnson & Company will feature some new sound-on-film motion pictures on pediatric subjects; also, some new artistic interests, at Booths 168, 169, 271, 272 and adjoining rooms. This will be the first exhibit on the Pacific coast of the Mead Johnson collection of ancient nursing bottles, pap boats and feeding spoons, which has increased greatly in scope and value since it was shown at the Philadelphia session in 1931. Among the new products will be Olac, for the feeding of prematures. See back cover.

MELLIN'S FOOD EXHIBIT

Physicians attending the Session are invited to visit the Mellin's Food Company's exhibit, which will occupy Booth 87. Well informed representatives will be on hand to discuss the adjustment of feeding mixtures to meet the nutritive requirements of infants during their first year, and other problems.

NEW INFANT FEEDING SCHEDULES

At Booth 14 the National Dairy Council will present an exceptionally fine set of infant diet schedules using fresh milk formulas, for use exclusively by the physician in prescribing the baby's diet from infancy to ten months. National Dairy Council representatives will be on hand to answer questions and take registrations for copies of the booklet.

A COMPLETELY MODIFIED MILK

Similac, a completely modified milk for infants deprived of breast feeding, will be displayed by M & R Dietetic Laboratories, Inc., Booth 71. Qualified representatives will gladly explain the value of the zero curd tension of Similac as it applies to both normal and special feeding cases. See page 116.

OIL PAINTING TO BE SHOWN

Nestle's Milk Products, Inc., in Booth 78, will exhibit an original oil painting as the main feature of their display. The painting represents a nursery scene and is the work of Stephen Csoka, who executed the canvas especially for Nestle. See pages 94-95.

EVAPORATED MILK PLANT

An actual working model of a milk condensing plant in miniature, every part constructed to scale, will be exhibited in Booths 134 and 135. The exhibit will offer an opportunity to obtain information about the production of Irradiated Pet Milk and its uses in infant feeding and general dietary practice. Miniature Pet Milk cans will be given each physician who visits the booth. See page 124.

TRY A BANANA MILK SHAKE

You are cordially invited to visit the United Fruit Company's Booth (No. 142) and sample a refreshing banana milk shake, made before your very eyes from the fresh ripe fruit mixed with cold milk and a scoop of vanilla ice cream. Here also you will find the latest information, developed by research, on the food value and the varied uses of the banana.

ORANGE-GRAPEFRUIT BEVERAGE

Blended Orange and Grapefruit Juice, a new and delicious addition to the "Dr. Phillips" line of canned citrus fruits and juices, will be featured at Booth 57, with other products of the firm.

STOKELY'S BABY FOODS

The fourteen different items in the Stokely line of baby foods, which are prepared by a special fine-chopping process known as "comminuting," will be displayed at Booth 27. Stokely's Tomato Juice and Stokely's Grapefruit Juice will also be included in the exhibit.

VEGEX FOR VITAMIN B

At Booth 149 Vegex will be featured as a potent source of the B Vitamin Complex. Its extrinsic factor potency and results in anemias, new data in child and mother feeding, and recent results in heart and diabetic and pellagra disorder studies will be shown, including the control tests used in biological assay. The palatability and simple food uses of Vegex in child and adult diets will also be demonstrated. See page 109.

MEDICAL BOOKS

MANY NEW MEDICAL WORKS

D. Appleton-Century Company will exhibit their entire line of medical works in Booth 44. Their "Practitioners Library of Medicine and Surgery" will be exhibited complete in its 13 volumes; also the complete set of the new "Postgraduate Surgery." The thirteenth revised edition of "Osler's Principles and Practice of Medicine" will be shown for the first time. The new "Essentials of Pathology" by Lawrence W. Smith and Edwin I. Gault, and other recent works, will be included.

SHOWN FOR THE FIRST TIME

Downey's "Handbook of Hematology" in 4 volumes, of 3,200 pages, will be shown for the first time at the booth, of Paul B. Hoeber, Inc., No. 107. The firm will also show the first copies of "The Culture of Organs," by Alexis Carrel and Charles A. Lindbergh; Lasher's "Industrial Surgery"; Sheehan's "Reparative Plastic Surgery"; Corner's "Attaining Manhood"; Parker's "Methods of Tissue Culture"; and other new and forthcoming publications. See pages 16 and 17.

F. A. DAVIS EXHIBIT

In Booth 115, the well known firm of F. A. Davis will exhibit their comprehensive library of authoritative works on medicine and surgery. Of particular interest are three new monographs which are nearing completion for the meeting but may not be released until late in June—"Symptomatology and Differential Diagnosis in Diseases of Children," by Sanford Blum, A.B., M.S., M.D.; a handbook of "Roentgen and Radium Therapy" by A. J. Delario, B.S., M.D.; and "Diseases of the Ear, Nose and Throat" by Francis L. Lederer, B.S., M.D. See pages 14 and 15.

LEA & FEBIGER BOOKS

At Booth 86, Lea & Febiger will exhibit the following new works: Brenner's "Pediatric Surgery"; Pohle's "Theoretical Principles of Roentgen Therapy and Clinical Roentgen Therapy"; Steel's "Biological and Clinical Chemistry"; Craig & Faust's "Parasitology"; Long & Goldberg's "Social Hygiene"; Weinzirl's "Hygiene"; Fishberg on "Heart Failure"; Davidoff & Dyke's "Normal Encephalogram"; Rowe's "Clinical Allergy"; Saxl's "Pediatric Dietetics" and Thorndike's "Athletic Injuries." Many new editions will also be shown. See pages 6 and 7.

NEW LIPPINCOTT PUBLICATIONS

Dr. Max Thorek's "Modern Surgical Technic," in 2 volumes, containing over 2,000 illustrations, will be shown for the first time at the Lippincott Booth (No. 100). Other new important publications to be on display are: "Experience in the Management of Fractures and Dislocations," by Dr. Phillip Wilson and associates, present-

LIST OF EXHIBITORS

Name	Aisle	Booth No.
DeVilbiss Co., The	Corr.	182
Dictograph Products Co.	C	239–240
Director of Exhibits	G	107-A
Doleith Laboratories, Inc.	F	167
Drug Products Co., The	F	127
Duke Laboratories, Inc.	L	83
Dupont Film Mfg. Co.	B	258–259
E. & J. Company of N. Y.	A	262
Earnshaw Knitting Co.	C	237
Eastman Kodak Co.	F	137–138–139
Electric Mfg. Co., The	D	200
Electro Therapy Prods. Corp.	D	191
Emerson Co., J. H.	B	260
Fischer Corp., The	G	110
Fischer & Co., H. G.	E	162
Foley Mfg. Co.	D	208
Foregger Co., Inc., The	K	4
Fougera & Co., E.	E	147–148
Frober-Faybor Co.	Corr.	213
Gastro-Phutor Laboratories	F	126
General Electric Co.	J	24
General Elec. X-Ray Corp.	L	6–7–8–9
General Foods	L	17
General Mills, Inc.	D	198
Gerber Products Co.	H	89
Gevaert Co. of America	A	261
Golden Gate Macaroni, Inc.	D	210
Gomco Surg. Mfg. Corp.	E	143

ing details of over 1,000 cases; "Outline of Roentgen Diagnosis," by Dr. Leo G. Rigler, in outline form with 227 illustrations; "New International Clinics," edited by Dr. George Morris Piersol; and "Diseases of the Blood and Atlas of Hematology," by Dr. Roy R. Kracke. See page 12.

MACMILLAN MEDICAL WORKS

The Macmillan Company extends a cordial invitation to visit its exhibit of new and outstanding books at Booth 23. Among recent publications to be displayed are the following: Forkner's "Leukemia and Allied Disorders"; Jones' "Digestive Tract Pain"; Kurtz's "Orthodiascopy"; Holman's "Arteriovenous Aneurysm"; Nelson-Crain's "Syphilis, Gonorrhea and the Public Health"; Strecker-Chambers' "Alcohol: One Man's Meat"; Mann's "Developmental Abnormalities of the Eye"; and Guedel's "Inhalation Anesthesia." See pages 18 and 19.

EXHIBIT OF MOSBY COMPANY

Among the many new books to be exhibited by the C. V. Mosby Company at Booth 93 are: Jensen's "The Heart in Pregnancy"; the 5th edition of Porter and Carter's "Management of the Sick Infant and Child"; Portheiser's "Symptoms of Visceral Disease"; Pruitt's "Hemorrhoids"; Watson's "Hernia"; Rea's "Neuro-Ophthalmology"; the 5th edition of Crossen's "Operative Gynecology," and the 6th edition of Clendening's "Methods of Treatment." Approximately 100 other volumes will complete the exhibit. See pages 8, 9, 10 and 11.

LOOSE-LEAF MEDICAL BOOKS

Thomas Nelson & Sons invite you to visit their exhibit in Booth 43. The Nelson "Loose-Leaf Medicine," "Loose-Leaf Surgery," "Loose-Leaf Diagnostic Roentgenology" (many volumes in one), and the new semi-annual replacement pages, showing the latest advances in medicine and surgery, will be on display.

FROM THE OXFORD PRESS

In Booth 51, Oxford University Press will have on display an extensive line of medical books, including "Management of the Pneumonias" by Dr. J. G. M. Bullowa; "Radiation Therapy" by Dr. I. I. Kaplan; and the standard work "Applied Physiology" by Dr. Samson Wright, 6th edition; together with "Oxford Loose-Leaf Medicine." See page 25.

"LOOSE-LEAF MEDICAL BOOKS"

In Booth 171, W. F. Prior Company will show their full line of loose-leaf medical works, including Tice's "Practice of Medicine," Lewis' "Practice of Surgery," Mock, Pemberton and Coulter's "Principles and Practice of Physical Therapy," Davis' "Gynecology and Obstetrics," and "Practice of Pediatrics" by Brennemann. A vast sum of money has been spent during the past year to keep all of the Prior works apace with medical advances, and representatives will be glad to tell all visitors about the advantages of the loose-leaf service. See pages 22 and 23.

OUTSTANDING SAUNDERS BOOKS

W. B. Saunders Company will exhibit at Booths 84 and 85 a complete line of books for the medical, dental, nursing and allied professions. Included will be a brand new edition of Beckman's "Treatment"; Buie's "Practical Proctology"; Herman's new "Urology"; new edition of Cecil's "Medicine"; Gifford's "Ophthalmology"; Padgett's "Surgical Diseases of the Mouth and Jaws"; Merritt and Fremont-Smith on the "Cerebrospinal Fluid"; the new (1938) "Mayo Clinic Volume"; Wiprud's "Business Side of Medical Practice"; Bastedo's "Materia Medica"; and many others. See pages 3, 4 and 5.

SIX UNIVERSITY PRESSES EXHIBIT

New books in medicine and surgery from six University Presses will be shown in a joint exhibit. The Presses cooperating in the display are Yale University Press, University of Pennsylvania Press, University of Illinois Press, University of Minnesota Press, Columbia University Press, and the University of Chicago Press. A representative of the University of Chicago Press will be in charge of the exhibit, Booth 126.

ADVANCE COPIES OF NEW BOOKS

At Booth 1, William Wood & Company will show advance copies of important books, including Portmann's "Operative Otolaryngology"; Cabot and Adam's "Physical Diagnosis"; Appleton and Tchuperoff's "Surface and Radiological Anatomy"; Feldman's "Clinical Roentgenology of the Digestive Tract"; Friedenwald's "Secondary Gastrointestinal Disorders"; Henderson's "Adventures in Respiration"; Bierman's "Medical Applications of Short Wave"; Wiltsie's "Chronic Intestinal Toxemia"; and many standard works. See pages 20 and 21.

A. M. A. PUBLICATIONS

A. M. A. periodicals, pamphlets and reprints as well as the American Medical Directory, Index Medicus and other books, will be found in Booth 167A. Also, in Booth 268, there will be a miniature stage production which, by means of animated figures, shows the value of *Hygeia*, the Health Magazine, to the physician and his patients.

MISCELLANEOUS

A "DIFFERENT" KIND OF EXHIBIT

A distinctive type of exhibit will be that of the American Seating Company, Booths 176 and 178. As an aid to the medical profession in influencing the present widespread movement toward modernizing school equipment, because of its importance as a factor in public health, the firm will present models and graphs showing just how seats affect the visual and general welfare of children. Doctors will be interested in the thorough-going research which underlies this presentation. See page 62.

AZNOE'S EMPLOYMENT SERVICE

An experienced representative of Aznoe's National Physicians' Exchange will be on hand in Booth 70 to offer the services of this organization to medical men and hospital executives who are considering additions or changes in office or hospital personnel. Available applicants include physicians, nurses, dietitians, technicians, or other medical assistants. This service is free to employers. Persons seeking an appointment or contemplating a change in employment are also invited to call.

MOTION PICTURE EQUIPMENT

Bell & Howell will exhibit and demonstrate various types of Filmo 16 mm. movie cameras, projectors and accessories.

New models in cameras will include the 70-F semi-professional with 400' magazine, motor drive and single frame exposure device. A new projector will be the 138-J two-case Filmosound with booster amplifier giving 18 watts output. Also a new free booklet on medical movie making will be available. Booth 16.

WOVEN NAME TAPES

Visitors at Booth 146, of J. & J. Cash, Inc., manufacturers of woven name tapes and insignia for hospital identification marking, will have the opportunity of seeing the model of a loom which makes the articles. Also featured will be a special style of woven name tape known as D-54, used by superintendents of nurses, dietitians, and nurses on the pocket of their aprons or uniforms. See page 119.

AT THE EASTMAN KODAK BOOTHS

The Eastman Kodak Company will feature a collection of interesting clinical radiographs in Booths 137, 138 and 139. Shown also will be both medical and pictorial motion pictures in full color, made with Kodachrome. Also there will be a large display of clinical subjects in both black and white and natural color, in the form of transparencies and prints, the latter also in color, employing the Wash-Off Relief process. Technical representatives will be in attendance to answer any questions. See insert between pages 62 and 63.

WILL SHOW RUBBERIZED MATERIALS

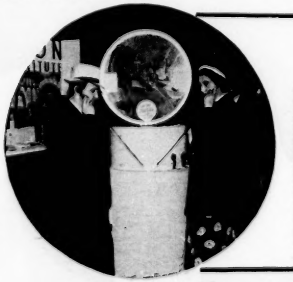
Water and dust proof lightweight rubberized sheetings and garments for office, hospital and home use will be demonstrated at Booth 233 by the Holland-Rantos Company, Inc. Rantosilk, a rubber calendered silk; Hollander, a rubber calendered lawn; and Rantogrip, a non-slip sheeting, will be included in the exhibit. All physicians are invited to call.

BABY TRAINING BOOKS

A newly revised edition of "Training the Baby" will be offered free to physicians, in limited quantities, in Booth 60, where Little Toidey and other toilet training accessories will be shown. New, interesting photographs will also be available. An illustrative mural of Comfy-Safe AutoSeat, the only item outside of habit training aids made by Juvenile Wood Products, Inc., will be featured in the exhibit.

IF YOU HAVE A HOBBY

The monthly magazine "Avocations," devoted to collectors of books and autographs, prints and etchings, antiques and glass, stamps and coins, and photography and travel as they relate to these hobbies, has been selected as the official organ of the American Physicians Art Association, and will be on display at their booth, No. 264. The June issue, which will be featured, will reproduce the works of over



LIST OF EXHIBITORS

Name	Aisle	Booth No.
Graybar Electric Co.	F	130
Hamilton Mfg Co.	K	31–32–33
Hanovia Chem. & Mfg. Co.	D	203–204
Hawaiian Pineapple Co.	D	193
Heidbrink Co., The	Corr	180
H. J. Heinz Co.	F	141
Hilker & Bletsch Co.	C	227
Hoeber, Inc., Paul B.	G	107
Hoffmann-La Roche, Inc.	J	66
Holland-Rantos Co., Inc.	C	233
Hospital Liquids, Inc.	D	192
Hygeia	A	268
Hynson, Wescott & Dunning	H	90
Ille Electric Corp.	B	220
International Vitamin Corp.	B	252
Irradiated Evap. Milk Inst.	E	152
Johnson & Johnson	G	108
Jones Metabolism Equip Co.	F	118
Jones Metal Products Co.	C	231
Juvenile Wood Products	J	60
Kelley-Koett Mfg. Co.	B-C	221–223–224
Keystone View Co.	B	251
Kitchen Katch-All Corp.	C	241
Lakeside Laboratories	G	101
Lea & Febiger	H	86
Lederle Laboratories	G	113–114
Lewis Mfg. Co.	C	234–235
Leitz, Inc., E.	E	145
Liebel-Flarsheim Co., The	C	225–226

100 physicians whose paintings, sculpture, etchings, photographs, and other works of art will be on display at the Convention.

MODERN RECORD SYSTEMS

The McCaskey Register Company, in Booth 40, will gladly explain to physicians their "One Writing" record system and show how it offers a convenience and savings on account of the ready visibility and accessibility of individual records. Here is an opportunity to pick up valuable information on efficient management of medical practice. See page 92.

MEDICAL BUREAU FACILITIES

In Booth 88 an experienced representative will offer the facilities of the Medical Bureau, an organization which acts as counselor in problems of medical personnel to physicians, hospital administrators, clinic managers and executives in the medical field. The records of physicians who have specialized in the various branches of medicine, as well as the records of hospital executives, graduate nurses, technicians, social workers and dietitians, will be available to those interested in the completion or reorganization of their staffs. See page 67.

PROFESSIONAL PROTECTION

The Medical Protective Company invites you to visit Booth 184. The representative who will be in charge is thoroughly trained in professional liability underwriting and is entirely familiar with the principles of the reciprocal rights and duties of a doctor and patient and with the circumstances peculiar to that relationship. He will be glad to explain how his Company meets the exacting requirements of adequate liability protection, which are peculiar to the professional liability field.

CALL AT PHILIP MORRIS BOOTH

Philip Morris & Co. Ltd. Inc., in a new exhibit, Booth 117, will demonstrate the method by which it was found that Philip Morris cigarettes, in which diethylene glycol is used as the hygroscopic agent, are less irritating than other cigarettes. Their representative will be happy to discuss researches and problems on the physiological effects of smoking. See page 117.

NORTHWESTERN MUTUAL LIFE

The medical department of the Northwestern Mutual Life Insurance Company will be represented at Booth 15, adjacent to one entrance of the scientific exhibit. Northwestern examiners and others who may be interested are cordially invited to visit the booth and meet personally one of the representatives from the home office medical department.

ADVANTAGES OF TAMPAX PRESENTED

Realizing the fact that many physicians are called upon by woman patients to answer questions regarding the different methods of sanitary protection during the menstrual period, Tampax, Inc., will have an attractive, dignified exhibit in Booths 188 and 189, where representatives will be glad to discuss all such problems with visitors. See page 91.

FULL INFORMATION ABOUT "WIX"

At Booth 212, the Wix Company will give physicians an opportunity to secure full information about Wix tampons. If you have occasion to recommend or answer questions concerning this newer method of sanitary protection, you will want to call and secure the facts concerning Wix. See page 88.

"RADIO NURSE" DEMONSTRATION

An opportunity to see and hear that ingenious new development of science known as the "Radio Nurse" will be afforded by a visit to the Zenith Radio Corporation Booth, 181. The device consists of two small units, the "Guardian Ear," supersensitive to the slightest sound, to be plugged into an electric outlet in the nursery or sickroom; and the "Radio Nurse" proper, which is plugged in wherever the mother happens to be, thereby conveying to her the slightest sound—a cry, a cough or even the sound of breathing.

OFFICE FURNITURE

NEW LINE OF WOODEN FURNITURE

Physicians will want to take a few minutes to investigate what is new in office equipment. An entirely new line of physicians' wooden furniture, with an abundance of improved, time-saving features, will be found on display at Booths 55 and 56. In addition, the Allison Company will have on display the popular Hanes table. See page 110.

NEW FURNITURE FOR THE OFFICE

If you have a feeling that your office needs modernization and the installation of new style furniture, it will pay you to stop at the exhibit of the Hamilton Manufacturing Company, Booths 31, 32 and 33. They show a wide range of styles in modern as well as conservative designs, and representatives will be glad to render assistance in your office planning. See page 119.

THE EAR, NOSE & THROAT OFFICE

A sample treatment room will be shown by Surgical Mechanical Research in Booth 242. Physicians are invited to visit the display and look it over with such questions as the following in mind: "Does it meet my particular needs?" "Will it always look neat and clean?" "Can I reach everything with a minimum of effort?" "Can I make a complete examination without moving the patient?" "What will be the reaction of the patient?"

OPTICAL INSTRUMENTS

DIAGNOSTIC INSTRUMENTS

American Optical Company will display its varied line of professional diagnostic instruments, such as the ophthalmoscope, otoscope, retinoscope, transilluminators, diagnostic sets and other ophthalmic instruments and equipment in Booths 205, 205-A, and 206. In addition, it will feature the Ophthalm-O-Graph, a portable binocular eye movement camera, which yields a visible objective and practical record of the functional efficiency of the reading eyes; also the Metron-O-Scope, which is a triple shutter, short exposure device for orthoptics applied to controlled reading.

NEW CLINICAL MICROTOME

A feature of Bausch & Lomb's exhibit, Booths 202 and 232, will be the new clinical microtome for rapid, accurate sectioning of frozen, celloidin and paraffin material. A Duboscq biological colorimeter with a new direct reading scale will be shown; also various models of Bausch & Lomb's medical, research and laboratory microscopes, with accessories. Haemacytometers, hemoglobinometers, slit lamps, the binocular ophthalmoscope, and the stereo camera will be included. See page 115.

THE BIO-PHOTOMETER

The physician who has heard of the Bio-Photometer for the clinical determination of the vitamin A status of the patient, and has desired to obtain first hand information concerning its operation, will have an opportunity of so doing at Booth 213. Three different models in which the Bio-Photometer is now available will be shown, at an interesting price range, and you are cordially invited to inspect all models at this Frober-Faybor exhibit. See page 78.

KEYSTONE VIEW COMPANY

Keystone View Company will present for the first time the Keystone Tests of Binocular Skill, an adaption to the Telebinocular of the Oral Reading Check Tests by William S. Gray. Another 1938 product to be shown is a unit of reading slides in three levels of difficulty especially adapted to all orthoptic exercises requiring sharp fixation. The Synoptiscope and the Keystone series of transparencies for use in Synoptiscope, Synoptophore and Orthoptiscope with a manual, and some new technics with the Telebinocular and Tel-Eye-trainer will also be shown. Booth 251.

NEW QUEBEC COLONY COUNTER

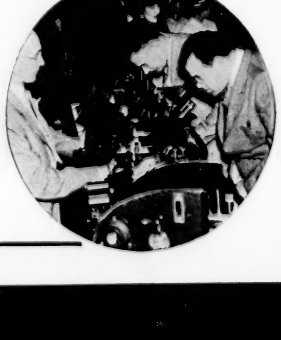
The Spencer Lens exhibit will feature medical microscopes, equipped for bright field and dark field work also, for blood counting with the Bright-Line Haemacytometer. Several types of Spencer microtomes will be set up for demonstration. Delineascopes for the projection of lantern slides, filmslides, or opaque materials—instruments for the lecture hall—will be exhibited. The Quebec Colony Counter, a new bacteria viewing device, will be shown to Convention visitors for the first time. Booth 228.

ZEISS EXHIBIT

Carl Zeiss, Inc., will exhibit at Booths 154 and 155 a collection of Carl Zeiss-Jena instruments, such as microscopes, microphotographic equipment, projection apparatus, refractometers, ophthalmological instruments, contact lenses, etc., as well as Zeiss-Ikon cameras, including the Contax. Special attention will be directed to the Wolf-Schindler Flexible Gastroscope and to a new model of the Zeiss Nordenson Retinal Camera. See page 65.

LIST OF EXHIBITORS

Name	Aisle	Booth No.
Lilly and Co., Eli	J	61-62-63-64
Linde Air Prod. Co., The	I	81
Lindquist, R. J.	Corr	217
Lippincott Co., J. B.	G	100
Lozier's Inc.	L	25-26
M. & R. Diet. Lab., Inc.	J	71
MacGregor Instrument Co.	Corr	173
Machlett Laboratories, Inc.	B	243-244
Macmillan Co., The	L	23
Mallinckrodt Chem. Wks.	K	42
Maltine Co.	K	30
Marcelle Non-All. Cosmetics	E	144
Mattern, F., Mfg. Co.	Corr	211
McCaskey Register Co.	K	40
McKesson Appliance Co.	D	207
McKesson & Robbins, Inc.	B	245
Mead Johnson & Co.	G-H-A-B-C	168-169-271 272 and Adj. Rooms
Medical Bureau	H	88
Medical Protective Co.	Corr	184
Mellin's Food Co.	H	87
Mennen Co.	F	136
Merck & Co., Inc.	L	10-11
Merrell Co., Wm. S.	J	59
Mosby Co., C. V.	H	93
Mueller & Co., V.	I	72-73
National Carbon Co., Inc.	I	81
National Dairy Council	L	14
Nelson & Sons, Thomas	K	43
Nestle's Milk Prod. Co.	I	78
Northwestern Mut. Life Ins. Co.	L	15



PHARMACEUTICALS and BIOLOGICALS

NEW "COUNCIL ACCEPTED" PRODUCTS

A feature at the exhibit of Abbott Laboratories in Booths 103 and 104 will be a section displaying more than 35 of their products which have been accepted by the Council on Pharmacy and Chemistry since January 1, 1938. Other popular items, selected from their long list of "Accepted" specialties also will be shown. You will be most cordially welcomed by the well trained corps of Abbott representatives who will be glad to discuss these products with you. See pages 30 and 31.

ARLINGTON CHEMICAL EXHIBIT

Physicians desiring to discuss their allergic problems will find cordial cooperation from the representatives in charge of the Arlington Chemical Company exhibit, Booth 153. A new diagnostic protein outfit containing 80 units, which was first announced in the March 26, 1938, Journal of the A. M. A., will be especially featured, as well as the smaller diagnostic pollen outfits which are made up for individual patients in any area. See page 42.

WILL FEATURE ORGANOTHERAPEUTICS

New products and processes illustrative of the progress and technique in the manufacture of organotherapeutics will be featured at the Armour Booths, 166 and 190. Improvements in packaging and standardization of accepted products, as well as many new items, will be exhibited. New dermal and ophthalmic Nu-Grip sutures will also be shown, and practitioners interested in recent developments in hormone therapy and other problems in endocrinology may discuss such matters with the head of the clinical research department. See page 39.

INTRAVENOUS SOLUTIONS

Baxter's line of Intravenous Saline and Dextrose solutions in Vacoliters, the vacuum-sealed container-dispensers, will be displayed in Booth 2. Also the Baxter suction siphon, for effective cavity drainage, will be shown, as will the Baxter blood transfusion set and "Blood Bank" assembly.

BILHUBER-KNOLL MEDICINALS

Metrazol, a restorative in barbiturate or opiate poisoning, surgical shock, and asphyxia; Dilaudid hydrochloride for pain relief and cough sedation; Theocalcin for diuretic and myocardial stimulation; These and the other well known medicinal chemicals of Bilhuber-Knoll—Euresol, Lenigallol and Bromural—can be discussed at Booth 96. Helpful prescription data on these products will be available.

SPECIALTIES BY CALCO

Urginin, a cardiac drug useful in auricular fibrillation, cardiac arrhythmias, decompensation, myocardial insufficiencies, and cardiovascular-renal disorders, will be featured at Booth 41 by Calco Chemical Company, Inc.; also Trichlorethylene-Calco, useful in tic douloureux and painful conditions about the face; Crystal Violet Jelly-Calco, valuable in the treatment of burns, and other Calco specialties including Aminoacetic Acid (Glycine, Glycocoll)-Calco, Tetrachlorethylene-Calco, Medicinal Dyes.

ANTI-ANEMIC PREPARATIONS

Chappel Laboratories extend an invitation to all members of the medical profession to visit their technical exhibit of Council Accepted, anti-anemia preparations, including Chappel Liver Extract, Concentrated, Intramuscular, and Chappel Liver Extract, Subcutaneous, which will be featured as outstanding developments in the potency and purification of Liver Extracts. Booth 151.

SODIUM BICARBONATE, U. S. P.

Church & Dwight Co., Inc., invites you to visit Booth 102. Here, in a newly designed and very modern exhibit, will be shown those dependable old products, Arm & Hammer and Cow Brand Bicarbonate of Soda, which have stood the "acid" test of time since 1846 and meet all the requirements of the U. S. P. XI. Competent representatives will be in charge. See page 71.

CIBA PHARMACEUTICAL PRODUCTS

Physicians are cordially invited to visit the Ciba Booths 12 and 13, where they will find exhibits of well known Ciba specialties, among which are Digifoline, Dial, Nupercaine, Lipiodine and Viofonn. Uses for these products will be described by the assistant medical director and the representatives of the firm, who will be glad to discuss any questions the doctor may have. See page 64.

SHOWN BY CUTTER LABORATORIES

Cutter Laboratories, in Booth 105, will feature their Council-Accepted biologicals and allied intravenous specialties. Dextrose solutions in Saftiflasks with the various mechanical improvements and modifications developed within the past year will be demonstrated by competent representatives. Of particular interest to visiting physicians will be their display of hay fever treatment sets together with the demonstration of the Cutter antitoxin syringe. See page 62.

VISIT DAVIES, ROSE EXHIBIT

When rambling among the scientific and commercial exhibits you will find it pleasant and profitable to visit the Davies, Rose & Company booth, 172. Here there will be on display preparations of particular interest to cardiologists and neurologists, with well informed representatives to explain them and discuss some of the new therapies with you.

PULVOIDS—HYPOLSOLS

One of the many interesting exhibits this year will be at Booth 127, the display of The Drug Products Co., Inc., where representatives will be on hand to explain the extreme care taken in the manufacture of the company's Hypolsols (ampules) and Pulvoids. The Hypolsols exhibit will stress the fact that these ampules measure up to rigid U. S. P. and N. F. requirements. Physicians are invited to spend a few moments at this informative booth. See page 76.

RECENT "ROCHE" CONTRIBUTIONS

Hoffman-La Roche will be at Booth 66, where Syntropan, Alurate, Larocaine and other recently introduced "Roche" contributions to modern materia medica will be featured and where members of the Nutley staff may be contacted.

LIPIODOL FOR RADIOLOGY

The exhibit of E. Fougera & Company, occupying booths 147 and 148, will feature the distinctive contrast medium Lipiodol Lafay. Up-to-date literature and reports will be available for the visiting physician. See page 46.

VITAMIN D PRODUCTS DISPLAY

An informative display featuring Vitamin D in the form of Viosterol (A.R.P.I. Process) in Oil, for the pharmaceutical trade, and Vitamin D incorporated in evaporated milk, for the fluid milk dealers, awaits physicians visiting this booth. The story of what the product "Embo" (Wheat Embryo) can accomplish in cases of Vitamin B deficiency also will be told. Nationally known products of the parent company, General Mills, Inc., will be an interesting part of the exhibit, Booth 198.

CALL FOR THIS BOOKLET

Intravenous solutions in Filtrair dispensers will be exhibited at the Hospital Liquids, Inc., display, Booth 192. Physicians will find interesting the manner in which solutions are kept pyrogen-protected and how they can be depended upon for sterility, security and safety in administration. Copies of an authoritative, informative booklet, "Parenteral Administration of Fluids," will be on hand for free distribution. See page 89.

MERCUROCHROME EXHIBIT

Hynson, Westcott & Dunning, Inc., will have an exhibit featuring Mercurochrome and various pharmaceutical specialties of their manufacture. There will also be a display of some of the diagnostic apparatus and ampule solutions which have been developed in cooperation with physicians. Competent representatives of the company will be in attendance to demonstrate the products and to answer questions. Literature and samples will be available to physicians. Booth 90.

AMPOULE PREPARATIONS

Their "Council Accepted" Ampoule preparations, particularly their ampoules of Dextrose (d Glucose) 50%, Sodium Cacodylate, Calcium Chloride, and Mercury Succinimide, will be exhibited by Lakeside Laboratories, Inc., in Booth 101. Members of the research staff will be present to demonstrate the chemical, bacteriological and physiological methods used to insure their purity, sterility and safety. See page 26.

HOUSE OF VITAMINS

Complete information on all matters pertaining to vitamins will be available for physicians at the International Vitamin Corporation Booth 252. Included will be a showing of the following "Council Accepted" vitamin products: Halibut Liver Oil Plain in Liquid and Capsule form;

LIST OF EXHIBITORS

Name	Aisle	Booth No.
Oxford Univ. Press	K	51
Parke, Davis & Co.	H	91–92
Patterson Screen Co.	F	131
Pelton & Crane Co.	B	257
Pet Milk Co.	F	134–135
Petrolagar Labs., Inc.	J-B	58–255
Philip Morris & Co.	G	117
Philips Metalix Corp.	F	132–133
Phillips Co., Dr. P.	J	57
Prior Co., W. F.	Corr.	171
Prometheus Elec. Corp.	E	150
Remington Rand, Inc., and Public Stenographer	}	Mezzanine
Rare Chemicals, Inc.	K	3
Riedel-de Haen, Inc.	K	34
Rose Mfg. Co., E. J.	D	191
S. M. A. Corp.	Corr.	186
Sanborn Co.	I	82
Sandoz Chemical Works	J	67
Saunders Co., W. B.	I	84–85
Scanlan-Morris Co.	C	236
Schering Corp.	G	112
Searle & Co., G. D.	J	65
Selby Shoe Co.	B	222
Sharp & Dohme	I	79–80
Siebrandt Mfg. Co., J. R.	A	270
Sight Light Corp.	Corr.	214
Sklar Mfg. Co., J.	H	95
Smith & Nephew, Inc.	C	238
Sonotone Corp.	Corr.	215

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Halibut Liver Oil with Vitamin D Concentrate in Liquid and Capsule form; Cod Liver Oil Concentrate in Liquid and Capsules; Cod Liver oil Vitamin Concentrate in Tablets; and Viosterol (A. R. P. I. Process) in Oil. See page 47.

FOUR-SECTIONAL LEDERLE DISPLAY

The progress and value of modern therapy in the treatment of pernicious anemia, pneumonia and scarlet fever are described in color animation graphs and photo-murals in the new four-sectional Lederle display, which will occupy spaces 113 and 114. Descriptive technical information, as well as the Lederle products on liver therapy, pneumonia typing, and pneumonia sera and treatment, and the use of scarlet fever antitoxin for prophylaxis and therapy will be attractively shown. See page 59.

DEMONSTRATIONS BY LILLY

In a continuous demonstration Eli Lilly and Company will carry out a method of standardizing oxytocic drugs upon isolated uterine muscle. Especially designed and lighted apparatus will enable the observer to follow the extent and duration of muscle contraction. The display, occupying Booths 61 to 64, inclusive, will also present new and interesting panels dealing with liver products; Betin (Insulin, Lilly); Protamine, Zinc & Betin (Insulin, Lilly); "Metycaine" (Gamma-(2-methyl-piperidino)-propyl Benzoate Hydrochloride, Lilly); Ephedrine; and Carbarsone. See page 58.

MALLINCKRODT CHEMICALS

Physicians and their friends will be welcomed at the Mallinckrodt Chemical Works booth, No. 42, where will be exhibited specialties as well as a long line of U.S.P. and N. F. preparations. The central theme will be the English and Latin labeled bottle, which recalls the pharmacy of earlier days and which is a step toward raising pharmacy to a higher place in professionalism. Along with well known prescription items will be shown analytical reagents used in pathology, and chemicals used by the various departments in routine hospital procedure. See page 51.

COD LIVER OIL RESEARCH

The Maltine Company will demonstrate in Booth 30, the various steps involved in the manufacture of Maltine with Cod Liver Oil, and will show illuminated slides of interest to physicians, including photomicrographs indicating the minuteness and uniformity of the oil globules in Maltine with Cod Liver Oil.

HALIBUT VITAMIN PRODUCTS

McKesson & Robbins, Inc. will display, in Booth 245, a series of halibut liver oil products, accompanied by an exhibit which will indicate the effects and use of vitamins A and D in the treatment of conditions arising from a deficiency of either or both of these vitamins.

LINDE AIR PRODUCTS TO EXHIBIT

The Linde Air Products Company, in conjunction with National Carbon Company, Inc., another unit of Union Carbide and Carbon Corporation, will occupy Booth 81. The exhibit will feature the use of oxygen for therapeutic purposes and the installation of piping systems for more economical distribution of oxygen. Illustrations will show various methods of administering oxygen therapy, and oxygen therapy apparatus will be on display.

VITAMIN B_1 HYDROCHLORIDE

Merck & Co. Inc., manufacturers of vitamin B_1 HCl, are presenting an exhibit in Booths 10 and 11 devoted to the synthesis, the requirements for, and the therapeutic uses of this product. The synthesis of crystalline vitamin B_1 HCl was followed by its successful production on a commercial scale. With adequate quantities available, extensive clinical studies were made possible. All physicians attending this convention are cordially invited to visit this exhibit. See page 32.

TO SHOW COLORFUL DIORAMAS

Only a five minute visit at Booth 59 is necessary to view an interesting series of colorful dioramas, depicting a variety of subjects and scenes from several parts of the world—cod fishing off Norway, shipping castor beans from inland Brazil and birch-brush harvesting in the New England hills. Two contrasting scenes—one showing the typical mid-west apothecary of the early nineteenth century and the other a section of a present-day research laboratory—help to illustrate the great progress of pharmacy during the past century. See pages 28 and 38.

PARKE, DAVIS EXHIBIT

A number of scientific accomplishments will be displayed by Parke, Davis & Company's staff of expert technical men in charge of Booths 91 and 92. Products of special interest to the medical profession will be shown, including Mapharsen (an advance in antisyphilitic therapy), glandular products (Theelin, Adrenalin and the Pituitrin group), also Meningococcus Antitoxin, and other biological products.

GET YOUR COPY OF "HABIT TIME"

Doctors who visit Booths 58 and 255 will be interested in the new and revised edition of Petrolagar's Habit Time booklet which has just come off the press. In addition to a wealth of information on the subject of constipation, Habit Time contains a number of splendid anatomical drawings by the celebrated Tom Jones. There will also be available a few sets of the Nineteenth Century Types, caricatures of famous men of science, lithographed and mounted for framing. These will be supplied to physicians as long as the limited supply lasts. See pages 36 and 37.

FOR BILIARY TRACT DISORDERS

At Booth 34 Riedel-de Haen, Inc., will display the advantage of prescribing chemically pure bile acids and their sodium salts in the treatment of hepatic and biliary tract diseases. Well informed representatives will gladly furnish any information regarding Decholin and Decholin Sodium. Also on display will be Pernoston, a safe and dependable hypnotic. See page 44.

SHOWN FOR THE FIRST TIME

At the Rare Chemical Booth, No. 3, the following preparations will be featured: Gitalin (Amorphous), a rapid, dependable, glucosidal fraction of digitalis purpurea, which, while as economical and effective as most whole leaf preparations, possesses a more uniform rate of elimination; Salysal "Rare Chemicals," the salicylic ester of salicylic acid, which provides improved salicylate therapy because local gastric irritation is reduced to a minimum and a smaller dosage is necessary; and Optochin Hydrochloride, ethylhydrocupreine, a specific for pneumococcal infections of the eye.

SANDOZ PHARMACEUTICALS

Sandoz Chemical Works will show their "Council Accepted" specialties in Booth 67. Products to be featured are "Gynergen," widely prescribed for the dramatic relief of migraine sufferers and for uterine hemostasis; the gluconate preparations of calcium (Calglucon) for oral, intramuscular and intravenous calcium therapy; "Scillaren" and "Scillaren-B," time-tested cardiodiuretics; "Sandoptal," isobutylallyl derivative of barbituric acid.

SCHERING EXHIBIT

Schering Corporation will have a new attractive exhibit in Booth 112. Members of the medical profession are cordially invited to call. Here will be an opportunity for personal discussion with representatives of the medical division and research laboratories concerning latest therapeutic developments. See page 56.

SEARLE PREPARATIONS

Valuable contributions to modern therapy will be displayed by the research laboratories of G. D. Searle & Company. Every physician is invited to call at Booth 65, where such products as Aminophyllin (Searle) and Aqueous Bismuth Sodium Tartrate will be shown. Capable representatives of the medical service department will be on hand to welcome you and furnish any desired information.

STRIKING SHARP & DOHME DISPLAY

Sharp & Dohme will have a new display at Booths 79 and 80. A number of items will be interestingly featured, including digitalis capsules, Propadrine Hydrochloride products and Protamine Zinc Insulin. Included will be a continuous showing of moving pictures on Antivenin and Protamine Zinc Insulin. Competent, well-informed representatives will be on hand to welcome physicians and to furnish information on Sharp & Dohme products. See page 53.

NUTRITIONAL SPECIALTIES

Smaco Nicotinic Acid (3-Pyridine Carboxylic Acid), the factor of the vitamin B_2 complex now being used for clinical research in connection with pellagra, will be displayed by S.M.A. Corporation in Booth 186. Other nutritional specialties exhibited will be: Smaco Carotene-(Provitamin A) in capsule, liquid form plain, and combined with vitamin-D-concentrate; Hypo-Allergic Milk; Alerdex, the Protein-Free Maltose and Dextrins; Protein S.M.A. (Acidulated); and S.M.A., the antirachitic, antispasmophilic breast milk adaptation. See third cover.

(Continued on advertising page 78)

LIST OF EXHIBITORS

Name	Aisle	Booth No.
Spencer Corset Co., Inc	F	123
Spencer Lens Co	C	228
Squibb & Sons, E. R.	L	74–75–76
Stacey, Inc., J. W.	Corr	170–174
Standard X-Ray Co.	D	196–197
Stearns & Co., Fred	G	106
Stokely Bros. & Co.	L	27
Storz Instrument Co.	L	28
Surg. Mech. Research	B	242
Sweetland, Ernest J.	L	19
Tampax Incorporated	D	188–189
Taylor Instr. Co.	K	49
Thomas, Charles C.	K	29
Tower Company, Inc	L	21
United Fruit Company	F	142
Univ. Presses, Books of	F	126
Vitamin Food Co. (Vegex)	E	149
Vichy Célestins	B	250
Walk-Over Shoe Co	F	121
Welch Allyn Co.	Corr	183
Westinghouse X-Ray Co.	E	158–159–160–161
White Labs., Inc	H	94
Winthrop Chem. Co.	F	122
Wisc. Alumni Res. Found.	E	163–164
Wix Co.	Corr	212
Wood & Co., Wm.	L	1
Wright & Co., E. T.	G	109
Wyeth & Bro., John	F	124–125
Zeiss, Inc., Carl	E	154–155
Zenith Radio Corp.	Corr	181

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MAY 7, 1938

THE SAN FRANCISCO SESSION

It is fifteen years since the American Medical Association last held an annual session in San Francisco. At that time the membership of the Association was 88,519; today it is 109,435, the largest number ever recorded in the history of the organization. *Hygeia* had just been established and is now celebrating its fifteenth anniversary, with a circulation well over 100,000. A few of the state medical societies had begun efforts for postgraduate education of their members; today we publish, week by week, records of the extension of this work to practically every state in the union. Fifteen years ago the American Medical Association was publishing five special periodicals; today there are nine, including the *Quarterly Cumulative Index Medicus*. There had not been established the Council on Foods, the Bureau of Medical Economics, the Bureau of Exhibits, the Bureau of Health and Public Instruction, the Council on Industrial Health and the Council on Physical Therapy. Since that time the American Medical Association has built a new building for its headquarters office. The number of employees has increased from 365 to 615. These simple facts indicate to some extent the expansion in the activities of the American Medical Association.

Next let us consider the problems that concerned the organized medical profession in 1923. The speaker of the House of Delegates called for a campaign against the socialization of medicine and urged the development of a department of health in the cabinet. These messages were reiterated by the President of the Association, Dr. George E. de Schweinitz. The President-Elect, Dr. Ray Lyman Wilbur, urged the establishment of a board of strategy in the American Medical Association which would be planning from five to ten years ahead for the work of the organization. The House of Delegates concerned itself with problems related chiefly to medical education, the abuse of clinics and the conduct of the affairs of the organization. There was much agitation concerning the lawful or unlawful prescribing of alcoholic liquors. Moreover, it was moved to create a section on radiology for the scientific advancement of that specialty. The Scientific Assembly concerned itself with symposiums on diet, on the mental health of the child and on preventive medicine. At the San Francisco session of 1923 Dr. William Allen Pusey was made President-Elect.

A reference to the report of the Board of Trustees and to the reports of officers, published in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION last week, and to the preliminary programs for the San Francisco session, which appear in this issue, indicate the advances that have taken place during fifteen years. The medical profession still maintains its successful opposition to socialization or federalization of medical care. It is now embarked on a nationwide program for the study of medical care and extension of medical service. This campaign, in the interest of the American people, has been one of the main problems before the American medical profession during this period. The new councils and bureaus indicate how completely the Association has accepted its responsibility in relationship to the care of the people's health. New methods of living and new problems of our civilization become promptly the concern of the American medical profession.

Attention should be called specifically to the program of the General Scientific Meetings, which appears on page 1574. At the time of the previous San Francisco session there was no such elaborate planning for carrying to the medical profession, through the clinical lectures, the latest advances in various fields. The special symposium on health problems in education is an indication of the manner in which the medical profession is cooperating with the schools in recognition of the fact that health must be the first objective in all education. The special symposiums that have been arranged in the various sections are a further indication of present interests, including particularly those concerned with the blood dyscrasias, the newer methods of treatment of schizophrenia, the occupational dermatoses, and infections of the sinuses. The Scientific Exhibit, described on page 1588, will reveal special sections devoted to anesthesia and to fractures, with innumerable exhibits in which men who have developed new methods in diagnosis, treatment and prevention of disease will themselves demonstrate the details of their work.

The annual session of the American Medical Association has become the leading event of the medical year, attracting from 6,000 to 10,000 physicians and representing every phase of medical interest. There is no reason to doubt that the San Francisco session will this year constitute the greatest medical assemblage ever held on the Pacific coast.

Already the demand for rooms is so great that many of the leading hotels are placed under considerable pressure. If you are planning to come to San Francisco, write at once, using the coupon on page 90 of this issue of THE JOURNAL so that a suitable room may be found for you.

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THE NATURE OF XANTHOMATOSIS

Xanthomatosis has for many years been a condition of obscure etiology. Most observers agree that the syndrome xanthomatosis is a manifestation of disturbed lipoid metabolism. Many unsolved questions remain with regard to the lipoid metabolism itself and its relation to the general metabolism. No doubt xanthomatosis includes a number of heretofore unrelated clinical conditions. First it was described as a rare disease of the skin. The commonly seen lesion is the familiar orange-yellow plaque on the eyelids of persons past middle life. The lesions are not confined to the skin but are observed in connection with tendon sheaths, mucous membranes, the heart, the peritoneum, the liver, the spleen and other internal organs. The lesions appear as plaques or nodules of a striking sulfur yellow to yellow-brown. The characteristic microscopic feature is the presence of large bright polyhedral cells with vacuolated or "foamy" protoplasm due to the high content of a fatlike substance. With the discovery by Panzer in 1906 and by Pinkus and Ludwig Pick in 1908 that the fatlike substances in the xanthomatous lesions were doubly refractile lipoids, the concept was formed that these lesions resulted from a disturbance of lipoid metabolism. Aschoff's demonstration of the selective affinity of the macrophages for various dyes as well as for fat substances made it possible to regard the foam cell as a cell of the reticulo-endothelial system, infiltrated with lipoids. Rowland [1] suggested that xanthomatous lesions represent a hyperplastic reaction of the reticulo-endothelial system resulting from infiltration of lipoids in excess in the body fluids. Xanthomatous lesions then represent an attempt to rid the body fluids of lipoids which cannot be properly excreted and which act as an irritant. Rowland proposed the name xanthomatosis to include the various manifestations related to disturbed lipoid metabolism.

Pinkus and Pick have demonstrated that the fat substances in the xanthomatous lesions are the doubly refractile lipids, cholesterol and cholesterol esters. They believed that certain cells became infiltrated with cholesterol because of an increased supply from the blood. This concept was supported by Aschoff's demonstration that reticulo-endothelial cells were able to take up certain dyes and fatlike substances from the blood.

Anitschkow in his cholesterol feeding experiments was able to produce foam cells in rabbits. It appeared, therefore, that hypercholesteremia was a necessary condition for the product of xanthomatosis. Chauffard and Laroche actually demonstrated the existence of hypercholesteremia in patients with xanthoma. They saw an analogy between the xanthomatous nodules due to excess of cholesterol in the blood and the tophi of gout due to the excess of uric acid in the blood. Later investigators found that cholesteremia does not always result in xanthoma eruption. Clinical observations suggest that trauma, friction or infection may act as accessory factors in producing these lesions.

Thannhauser and Magendantz [2] insist that there is no proof of the existence of such a disease as a general metabolic disturbance of the cholesterol metabolism and suggest that the metabolic disturbance in question is an intracellular disturbance confined to the reticular cells themselves, in consequence of which they may become xanthoma cells not by an increased supply but as the result of an intracellular metabolic disorder. These authors point out that hypercholesteremia is found only in one group of xanthomatous organs while the other shows a normal amount of cholesterol in spite of the fact that the same histologic constituents are found in the two. This, in their opinion, favors the idea that one has to deal here with a local cellular disturbance rather than with a general metabolic disturbance of cholesterol synthesis. They regard xanthoma cells as fat cells with embryonal qualities able to form all kinds of lipids.

Whether the xanthoma cells represent an infiltrative, a chemical or a degenerative process, it is apparent that the disturbance of lipid metabolism of the reticulo-endothelial system is the underlying pathogenesis in a number of hitherto unrelated clinical entities. Among these should be included xanthelasma palpebrarum, xanthoma multiplex, xanthomatous tumors of tendon sheaths and generalized visceral xanthomatosis, including such apparently distinct entities as the Schüller-Christian syndrome, Niemann-Pick disease and Gaucher's disease.

1. Rowland, Russell S.: Xanthomatosis and the Reticulo-Endothelial System: Correlation of an Unidentified Group of Cases Described as Defects in Membranous Bones, Exophthalmos and Diabetes Insipidus (Christian's Snydrome), Arch. Int. Med. **42**: 611 (Nov.) 1928.

2. Thannhauser, S. J., and Magendantz, Heinz: The Different Clinical Groups of Xanthomatous Diseases: A Clinical and Physiological Study of Twenty-Two Cases, Ann. Int. Med. **11**: 1662 (March) 1938.

GRADUATE INSTRUCTION IN COUNTY SOCIETIES

Thirty-five years ago Sir William Osler [1] spoke on the educational value of the medical society. A well conducted medical society, he maintained, should represent a clearing house in which every local physician would obtain his intellectual rating and in which every physician could determine his assets and liabilities. "We doctors do not 'take stock' often enough," said Osler, "and are very apt to carry on our shelves stale out-of-date goods. The society helps to keep a man 'up to the times' and enables him to refurnish his mental shop with the latest wares. . . . It keeps his mind open and receptive and counteracts that tendency to premature senility which is apt to overtake the man who lives in a routine."

The American Medical Association was founded primarily to cultivate and advance medical knowledge.

1. Osler, William: On the Educational Value of the Medical Society, Boston M. & S. J. **148**: 275, 1903.

As a federation or union of constituent societies, it looks largely to its county and state organizations to share the responsibilities which were assumed ninety-one years ago. These component societies have not been unmindful of their duties. In many communities they have successfully conducted postgraduate extension courses and have made this work their most important function.

As early as 1906 the Tarrant County Medical Society of Texas had, under the stimulus of Dr. J. N. McCormack, field organizer of the Association, offered twelve courses of from five to fifteen periods each on such subjects as anatomy, bacteriology, pathology, pharmacology, physiology, physical diagnosis, medical jurisprudence, history of medicine and surgery. In the next year Dr. John H. Blackburn of Bowling Green, Ky., outlined a four year course of study for physicians in the Councilors Bulletin of the American Medical Association, which was distributed to officers of county and state societies throughout the country. This systematic, continuous review of what was essentially the undergraduate curriculum was a forerunner of the postgraduate plans now operating so successfully in such states as Michigan, Ohio and California. The importance of presenting clinical material for discussion was appreciated then as now. Graphs, charts and other adjuncts to informal discussions were definite aids to teaching. By 1909 approximately 350 county societies in twenty-nine states were actively participating in the American Medical Association's program.[2] A second four years of general review courses was given from 1911 to 1915, at which time the Council undertook its first survey of graduate medical education. Seven years later the Council again encouraged every county medical society to engage in an educational program. While it was appreciated that this was a national, a state, a community problem, it is always, in its practical application, a community problem.[3] At that time it was recommended that a plan of postgraduate lectures and diagnostic clinics be provided. In the next year, 1923, the President-Elect of the Association, Dr. Ray Lyman Wilbur, stated that each state organization must recognize its responsibilities and take the initiative in meeting its local conditions and that each state should be urged to work out its own problems in its own way. President George E. de Schweinitz (1922) had likewise recommended that the Association should expend greater energy, especially through the state and county medical societies, in this connection. The Council on Medical Education and Hospitals was urged to take up and promote postgraduate medical education in county and district medical societies. At this time a set of principles concerning graduate medical education was adopted by the Council and endorsed by the House of Delegates.

Subsequent reports by Dr. Olin West, Secretary of the Association, have indicated the increasing interests and demands of physicians for continuing training after licensure. Such efforts, stimulated by the Council, must originate locally. Frequently the hope has been expressed that a way might be found by which the American Medical Association could become actively helpful in providing clinical instruction for its members who could not avail themselves of the facilities at medical centers far removed from their homes. The survey now being conducted by the Council on Medical Education and Hospitals will indicate what has been done and also the places where help may be needed.

2. Personal communication from Dr. John H. Blackburn.

3. Minutes of the Annual Meeting of the House of Delegates of the A. M. A., St. Louis, 1922, p. 29 (Dr. A. D. Bevan, chairman, Council on Medical Education and Hospitals).

DEATHS FOLLOWING ELIXIR OF SULFANILAMIDE-MASSENGILL: VI

The investigation of the deaths following the use of Elixir of Sulfanilamide-Massengill, as was brought out in the reports of officers and the Board of Trustees, published last week, was a noteworthy example of the work of the headquarters group of the American Medical Association for the protection of the public.[1] In this work Drs. E. M. K. Geiling and Paul Cannon and their associates at the University of Chicago gave indispensable cooperation. As soon as possible after notification of apparent toxic actions following the use of this preparation was received, reports were published pointing out that diethylene glycol was the toxic agent. The number of deaths that were confirmed was seventy-six; others were reported to the government.[2]

Approximately six months has elapsed since this disaster. Now Drs. Paul R. Cannon and E. M. K. Geiling [3] have published some further studies of pathologic effects, in both experimental animals and man, of Elixir of Sulfanilamide poisoning. The pathologic effects in the kidneys and livers of dogs, rats and rabbits were identical when comparable amounts of Elixir of Sulfanilamide or pure diethylene glycol alone were administered by mouth, in divided doses. When diethylene glycol, the solvent for sulfanilamide in the "Elixir," was excreted through the kidneys of the experimental animals, severe hydropic degeneration of the convoluted tubules occurred and also occlusion of the lumens. As a consequence, anuria resulted followed by acidosis and uremia. The diethylene glycol also caused a characteristic central hydropic degeneration within the liver. Essentially similar changes were observed in the kidneys and livers in necropsy material examined by them from eleven human fatal cases of poisoning by "Elixir of Sulfanilamide." Pulmonary

1. Elixir of Sulfanilamide-Massengill, Special Article from the American Medical Association Chemical Laboratory, J. A. M. A. **109:** 1531 (Nov. 6) 1937.

2. Deaths Due to Elixir of Sulfanilamide-Massengill, Report of the Secretary of Agriculture, J. A. M. A. **109:** 1985 (Dec. 11) 1937. See also Deaths Following Elixir of Sulfanilamide-Massengill, editorials in THE JOURNAL, Oct. 23, 1937, p. 1367; October 30, p. 1456; November 6, p. 1544; November 20, p. 1727; December 11, p. 1992.

3. Cannon, P. R., and Geiling, E. M. K.: Pathologic Effects in Elixir of Sulfanilamide Poisoning, Proc. Inst. Med. Chicago **12:** 111 (April 15) 1938.

edema and at times bronchial pneumonia developed in both the experimental animals and in human beings. In several of the human cases diffuse symmetric cortical necrosis with recent hemorrhages was present in the kidneys, resembling in many respects the symmetric cortical necrosis that is observed in some of the toxemias of pregnancy. Hyaline thrombosis of the smaller cortical arteries and arterioles with resulting diffuse infarction of the cortex was noted. Essentially identical changes were described by Barber in five fatal cases of poisoning by dioxane, the anhydride of diethylene glycol.[4]

In common with other glycols, such as glycerin, diethylene glycol is a hygroscopic agent. It is not metabolized, apparently, and, according to Cannon and Geiling, may accumulate in the cells of the convoluted tubules causing them to hold more water. Its effect, they point out, may be due to cytoplasmic injury of the tubular cells with resulting disturbance of internal metabolism and severe intracellular edema. Sulfanilamide alone does not cause these results in dogs, rabbits or rats, even when given in large doses.

Several interesting pharmacologic points arise from the work necessitated by the "Elixir of Sulfanilamide-Massengill" tragedy. One emphasizes anew that acute toxicity alone is not an adequate criterion for evaluating the safety of a drug; determinations of chronic toxicity are equally important. In all cases careful pathologic studies are desirable. In work dealing with drug tolerances and toxicity, observations should be made on different species. Further experimental studies concerning the toxic effects of other glycols are under way which will lead to better understanding of this class of compounds.

Current Comment

PRESENT TRENDS OF FATALITY IN PULMONARY TUBERCULOSIS

Although the incidence of pulmonary tuberculosis has been decreasing in this country for a number of years, the effectiveness of present day methods of therapy is not equally well understood. Recently Drolet[1] has analyzed the case fatality rates from 1915 to 1935. The ratio of deaths to new cases of tuberculosis in the various communities has varied little during the past twenty years. During the period in which the incidence of the disease and the mortality have declined from 40 to 60 per cent, the ratio of deaths to new cases has declined only 5 or 6 per cent in New York, Detroit and Philadelphia; in Chicago there has been no decrease. Persons dying from tuberculosis now, however, average a slightly greater age than formerly. In the United States the average age of death of males was 36.4 years in 1913 and 41.5 years in 1933; in females it was 32.5 in 1913 and 35.8 in 1933. Similar increases in average age were noted in statistics from England and Wales. In the United States among patients in sanatoriums the death rate was 20 per cent in 1925, 23 per cent in 1931 and 24 per cent in 1934. The proportion of all tuberculous patients "isolated" in hospitals, however, is several times greater now than in the past and has risen from approximately 4 per cent in 1915 to 25 per cent in 1934. The adjustment of these figures indicates that sanatorium and surgical treatment of pulmonary tuberculosis have had little effect on the case fatality rates of the tuberculous population in the communities studied. This constitutes a surprising statistical conclusion in view of the apparent individual effectiveness of such measures as pneumothorax. Further analytic studies should be made before it can be safe to conclude that therapeutic measures in pulmonary tuberculosis are as ineffective as they appear to be statistically.

4. Barber, Hugh: Hemorrhagic Nephritis and Necrosis of the Liver from Dioxane Poisoning, Guy's Hosp. Rep. **84**: 267 (July) 1934.

1. Drolet, Godias J.: Present Trend of Case Fatality Rates in Tuberculosis, Am. Rev. Tuberc. **37**: 125 (Feb.) 1938.

Association News

RADIO BROADCASTS

The American Medical Association and the National Broadcasting Company present the fifth series of network health programs, beginning Oct. 13, 1937, and running weekly through June 15, 1938. The programs are presented over the Red network each Wednesday at 2 p. m. eastern standard time, 1 p. m. central standard time, 12 o'clock noon mountain standard time and 11 a. m. Pacific standard time.

In localities where daylight saving is in effect, the schedule remains the same, but this brings the program one hour earlier to adjacent areas on standard time.

The hours indicated above will be effective until June 1. Programs for June 1, June 8 and June 15 will be broadcast at 12:30 p. m. eastern standard time or 1:30 eastern daylight saving time; central time is one hour earlier, mountain time two hours earlier and Pacific time three hours earlier than eastern daylight saving or standard time.

The dates and topics of the broadcasts for the next five "Your Health" programs are as follows:

Mothers and Children

May 11—Hospitals Aid Health: the place of the hospital in the health program of the individual and the community.

May 18—Runabouts, 1938 Model: the preschool child and the health and personality problems of that age.

Using Health Knowledge

May 25—The Health Check-Up: periodic health examination and what follows, and why.

June 1—Vacation Plays and Misplays: making the vacation a real contribution to health and recreation.

June 8—Graduation and Then What: a new phase of life begins at commencement, and health contributes to success.

The stations on the Red network are privileged to broadcast the program, but since it is a noncommercial program they are not obliged to do so. Interest on the part of medical societies, woman's auxiliaries and others may have weight with program directors of local stations. A personal visit to the program director might be advisable if the program is not being taken by a local station. This is an opportunity for the appropriate committees of county medical societies to indicate their interest in having this program broadcast in their community and to enlist the interest of other groups.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

The Herzstein Lectures.—Dr. George W. Pickering, department of clinical research, University College Hospital Medical School, London, England, will deliver the sixth course of the Morris Herzstein Lectures in San Francisco, under the auspices of Stanford University and the University of California. Following are the dates and titles of the lectures:

May 23, The Problem of High Blood Pressure in Man.
May 24, Experimental Hypertension.
May 25, The Renal Pressor Substance.

Dr. Pickering will also give a popular lecture at a luncheon May 26 on "The Biological Significance of Pain."

FLORIDA

State Medical Meeting at Miami.—The sixty-fifth annual meeting of the Florida Medical Association will be held at the Columbus Hotel, Miami, May 9-11, under the presidency of Dr. Edward Jelks, Jacksonville. The Dade County Medical Society will act as host. The speakers will include:

Dr. Harrison A. Walker, Miami Beach, Preoperative and Postoperative Care in Intestinal Obstruction.
Dr. Luther W. Holloway, Jacksonville, Quinine Blindness in Children.
Dr. Carol C. Webb, Pensacola, Hand Infections.
Dr. Milton Paul Travers, Miami Beach, Frequent Causes of Prolonged Disability in Fracture Treatment.
Dr. Aubrey L. Huskey, Chattahoochee, Insulin Shock Therapy.
Drs. Robert E. Repass and Carl S. McLemore, Miami Beach, Relationship of Carcinoma of the Larynx to Precancerous Lesions.
Dr. Orville N. Nelson, Bay Pines, Management of Sinusitis.
Dr. James L. Borland, Jacksonville, Diagnosis and Treatment of Amebic Dysentery.
Dr. John R. Boling, Tampa, Presacral Nerve Resection for the Relief of Pelvic Pain.
Dr. Samuel Marion Salley, Miami, Disturbances of Cardiac Rhythm.
Dr. James G. Lyerly, Jacksonville, Prefrontal Lobotomy for Involutional Melancholia.
Dr. Albert B. McCreary, Jacksonville, Final Responsibility of Public Health Rests on the Medical Profession.
Dr. Lauren M. Sompayrac, Jacksonville, Lupus Erythematosus.
Dr. Jess V. Cohn, Hollywood, Adolescent Turmoil: Agitated Depression with Panic Reaction.
Dr. Carl D. Hoffmann, Orlando, Sterility.

Dr. Warren F. Draper, assistant surgeon general, U. S. Public Health Service, Washington, D. C., will address a public meeting in Bay Front Park Monday evening. Golf and fishing are features of the entertainment program; the association dinner will be held Tuesday evening and the annual smoker Monday evening. Associations meeting concurrently with the state society include the Florida Railway Surgeons' Association, the Florida Society of Dermatology and Syphilology, Florida section, Southeastern Surgical Congress, the Florida Pediatric Society and the Florida Radiological Society. A program for women has also been planned under the auspices of the auxiliary to the Dade County Medical Society.

ILLINOIS

State Medical Meeting at Springfield May 17-19.—The ninety-eighth annual meeting of the Illinois State Medical Society will be held at the Knights of Columbus Building, Springfield, May 17-19, under the presidency of Dr. Rollo K. Packard, Chicago. Dr. Irvin Abell, Louisville, Ky., President-Elect of the American Medical Association, will deliver the oration in surgery Wednesday May 18 on "Breast Tumors." Out of state speakers will include Drs. Elmer L. Sevringhaus, Madison, Wis., on "Pituitary Therapy in General Practice" and Albert D. Ruedemann, Cleveland, on "Exophthalmos." The program will include symposiums on intestinal obstruction, diseases of the respiratory tract, injuries of the abdomen and treatment of malignant disease. Other speakers will include:

Dr. Arthur F. Goodyear, Decatur, Sulfanilamide—Its Use in General Practice.
Dr. Abraham A. Low, Chicago, Metrazol Shock Treatment of Functional Psychoses.
Dr. Tell Nelson, Chicago, Relation of Allergy to Diseases of the Respiratory Tract.
Dr. Harry Culver, Chicago, Traumatic Lesions of the Male Urethra.
Dr. Edmund P. Halley, Decatur, X-Ray Therapy of the Uterus and Adnexa.

A conference on diseases of children will be held Tuesday morning, consisting of a symposium on the newborn. The annual secretaries' conference will be held Tuesday morning and the annual meeting of the woman's auxiliary on Monday, Tuesday and Wednesday.

Chicago

Testing Stations for Venereal Diseases.—The department of health opened on a permanent basis thirty-six neighborhood testing stations for syphilis April 11. In addition, there are welfare stations and park district fieldhouses to take care of volunteers who wish to undergo these tests. Since Nov. 30, 1937, the board of health has tested 19,872 volunteers and found 904, or 4.5 per cent, infected. Of 6,566 high school children, sixty-one, or 0.9 per cent, were found to be infected, newspapers reported.

Dr. Schiller Appointed Pathologist at Cook County Hospital.—Dr. Walter Schiller, pathologist at Jewish Memorial Hospital, New York, has been appointed chief of the pathology department at Cook County Hospital to succeed the late Dr. Richard H. Jaffé. Aged 50 and a native of Vienna, Dr. Schiller graduated at the University of Vienna in 1912. He has served as assistant pathologist of the Military Hospital, Vienna; resident pathologist of the Clinic of Internal Medicine, and for fifteen years as assistant to the Second Gynecologic Clinic and director of laboratories.

MICHIGAN

Personal.—Dr. Thomas E. Gibson, Paw Paw, has been appointed health director of Van Buren County; he held a similar position in Eaton County.——Dr. Richard M. Johnson has been appointed medical director of Eloise Hospital, Detroit.

Conference on Mental Hygiene.—The Michigan Society for Mental Hygiene held its second annual spring conference at the Hotel Statler, Detroit, April 7-8. The following were on the program:

Dr. John M. Dorsey, Ann Arbor, Intelligent Home Living.
Dr. George S. Stevenson, New York, What Constitutes a Good Child Guidance Clinic.
Dr. Harry Stack Sullivan, New York, Application of the Principles of Mental Hygiene to the Practice of Medicine.
Dr. Henry C. Schumacher, Cleveland, Human Relations in the Business World.
Charles Scott Berry, Ph.D., Columbus, Ohio, What Has Mental Hygiene to Offer to Special Education.
Dr. Bernard Glueck, New York, Contemporary Issues in the Relationship Between Psychiatry and the Law.

NEW HAMPSHIRE

State Medical Meeting at Manchester.—The one hundred and forty-seventh annual meeting of the New Hampshire Medical Society will be held in Manchester May 17-18 at the Hotel Carpenter under the presidency of Dr. Samuel T. Ladd, Portsmouth. Guest speakers will be:

Dr. John H. J. Upham, Columbus, Ohio, President, American Medical Association, Blood Dyscrasias.
Dr. Frederick T. Lord, Boston, Treatment of Pneumonia.
Dr. Donald S. King, Boston, Cancer of the Lung.
Dr. Edward D. Churchill, Boston, Empyema.
Dr. Isidor S. Ravdin, Philadelphia, Surgical Diseases of the Extrahepatic Bile Ducts.
Dr. Hayes E. Martin, New York, Diagnosis and Treatment of Intra-Oral Cancer.
Dr. Walter Bauer, Boston, Treatment of Arthritis.

New Hampshire physicians will conduct round table conferences Tuesday and Wednesday mornings. Dr. Upham and Dr. Ladd will speak at the annual banquet Wednesday evening. At this meeting fifty-year medals will be presented to Drs. Aloha H. Harriman, Laconia; Frederick L. Hawkins, Meredith, and Henry O. Smith, Hudson.

NEW JERSEY

State Medical Meeting at Atlantic City.—The annual meeting of the Medical Society of New Jersey will be held at the Ambassador Hotel, Atlantic City, May 17-19. There will be a general scientific session Tuesday evening May 17, with Dr. George W. Crile, Cleveland, as the speaker on "Clinical Results in the Surgical Treatment of Essential Hypertension." Guest speakers at the section meetings include:

Dr. George B. Eusterman, Rochester, Minn., Newer Aspects in Etiology and Treatment of Ulcers of the Gastrointestinal Tract.
Dr. Toufick Nicola, New York, Recurrent Dislocation of the Shoulder.
Dr. Thomas H. Lanman, Boston, Surgery in the Abdomen in Infants and Children.
Dr. Meredith F. Campbell, New York, Pathology and Treatment of Urinary Infection in Children.
Dr. Josephine B. Neal, New York, Treatment of Infections of the Central Nervous System with Special Reference to Sulfanilamide.
Dr. George T. Pack, New York, The Chaoul Method of Contact Roentgen Ray Therapy.
Dr. Bernard H. Nichols, Cleveland, The William G. Herrman Lecture, Partial and Complete Ureteral Obstruction as a Roentgenological Problem.
Dr. Harvey B. Matthews, Brooklyn, Hemorrhages of Pregnancy.
Dr. Leroy A. Schall, Boston, Diagnosis and Treatment of Malignant Disease of the Sinuses.
Dr. Arthur M. Fishberg, New York, Recognition of Early Signs of Heart Failure Frequently Overlooked.

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NEW YORK

Society News.—Dr. Isaac H. Levy, New York, addressed the Cortland County Medical Society March 18 on "Lesions of the Opening of the Stomach."——Dr. Delmas K. Kitchen, Detroit, addressed the Chautauqua County Medical Society March 16 on recent advances in the use of endocrine products.——Dr. William T. Doran, New York, addressed the Fulton County Medical Society, Gloversville, March 18 on "Intra-Abdominal Conditions Due to Trauma."——Drs. Edward E. Gillick, Niagara Falls, and Burton T. Simpson, Buffalo, addressed the Niagara County Medical Society, Niagara Falls, March 8 on "Control of Syphilis" and "Recent Advances in the Etiology of Cancer" respectively.——Dr. Ralph Pemberton, Philadelphia, addressed the Medical Society of the County of Westchester, April 19, on arthritis.——Dr. Soma Weiss, Boston, addressed the Rochester Academy of Medicine April 7 on "Syncope, Shock and Collapse."

New York City

Harlow Brooks Lecture.—The Washington Square Medical Society has established the Harlow Brooks Memorial Lecture in memory of the late Dr. Brooks, who was a member of the society. Dr. Emanuel Libman gave the first lecture April 26 on "Diagnostic Studies in Pain with Special Reference to Abdominal Disorders."

Centennial of Dr. John Shaw Billings.—The one hundredth anniversary of the birth of Dr. John Shaw Billings, under whose direction the Army Medical Library was developed and the *Index Catalogue* was compiled, was observed by a special exhibit at the New York Public Library, of which he was director after his retirement from the army library in 1895. Dr. Billings was a surgeon during the Civil War and in 1864 was transferred to the office of the surgeon general. The exhibit in his honor, which was mainly biographic, was on view during the week of April 12.

Prize for Research on Kidney Diseases.—The New York Academy of Medicine announces that approximately $1,000 is available under the Edward N. Gibbs Memorial Prize toward original research on diseases of the kidney during 1938. Candidates must be physicians who have been graduated at least three years and be residents of the United States. They shall submit "evidence of research already performed and of facilities to prosecute research upon the causation, pathology and newer methods of treatment of diseases of the kidney." The award may be continued through not more than three years to any one person. Applications with the required evidence should be addressed to the academy, 2 East One Hundred and Third Street, before June 1.

Benjamin White Dies.—Benjamin White, Ph.D., for many years a bacteriologist in New York and Massachusetts, died March 28 in Southern Pines, N. C., aged 59. After receiving his doctorate from Yale University in 1903 Dr. White was appointed assistant director of the Hoagland Laboratory, Brooklyn, and became director in 1907. From 1914 to 1920 he was assistant director of the bacteriologic laboratory of the New York City Department of Health. In the latter year he became director of the division of biologic laboratories, Massachusetts Department of Health, where he remained until his retirement in 1933 because of ill health. Since his retirement he had completed a book on "The Biology of the Pneumococcus" sponsored by the Commonwealth Fund, of which he was a consultant. He was an honorary fellow of the Massachusetts Medical Society and a member of many scientific societies and of the editorial board of the *New England Journal of Medicine*. During the World War he served as a captain in the Sanitary Corps, U. S. Army.

OKLAHOMA

State Medical Meeting at Muskogee.—The forty-sixth annual session of the Oklahoma State Medical Association will be held in Muskogee May 9-11, with headquarters at the Severs Hotel and under the presidency of Dr. Samuel A. McKeel, Ada. Guest speakers will address two general sessions as follows:

Dr. Frank C. Neff, Kansas City, Mo., Management of the Hypertonic Period of Early Infancy; Observations from the Current Year's Experience with Medical Cases in a Children's Hospital.
Dr. William S. Middleton, Madison, Wis., The Surgery of Pulmonary Tuberculosis from a Medical Standpoint; Acute Coronary Occlusion.
Dr. Edward H. Ochsner, Chicago, The Middle Way; The Socialization of Medicine.

In addition, Dr. Alexander Marble, Boston, will address the section on general medicine on "Diabetes Mellitus—Recent Advances in Its Treatment" and Dr. Roland M. Klemme, St. Louis, the section on general surgery on "Diagnosis and Treatment of Trigeminal Neuralgia." The section on genito-urinary diseases and syphilology will present a symposium on gonorrhea given by Drs. Robert H. Akin, Oklahoma City; Julius H. Howe, Ponca City, and Allen R. Russell, McAlester. The same section will sponsor a symposium on syphilis given by Drs. David V. Hudson and James Stevenson, Tulsa; Charles R. Rayburn, Norman, and Charles M. Pearce, Oklahoma City. The annual golf tournament will be held Monday May 9 at the Muskogee Country Club. The president's reception and dance will be Tuesday evening. The Woman's Auxiliary will hold its meeting Monday.

SOUTH CAROLINA

State Medical Meeting at Myrtle Beach.—The ninetieth annual meeting of the South Carolina Medical Association will be held at Myrtle Beach May 17-19 with headquarters at the Ocean Forest Hotel. The scientific program will open with a symposium on traumatic surgery Tuesday evening May 17, presented by Drs. Julian Deryl Hart, Durham, N. C.; James C. McLeod, Florence; Austin T. Moore, Columbia, and James R. Young, Anderson. An innovation this year will be round table discussions each afternoon. Dr. Oren Moore, Charlotte, N. C., will conduct one of these on "Office Gynecology" and Dr. Richard Torpin, Augusta, Ga., one on obstetrics. Dr. Isaac A. Bigger, Richmond, Va., will deliver the annual oration on surgery on "Indications for Surgical Treatment and Lesions of the Pericardium and Heart." Among South Carolina physicians who will participate in the program will be:

Dr. George H. Bunch, Columbia, Acute Perforation of Gastric and Duodenal Ulcers.
Dr. William Weston Jr., Columbia, Congenital Vomiting—Cause and Treatment.
Dr. William R. Barron, Columbia, My Conclusions from Six Years' Experience with Transurethral Surgery of the Prostate.
Drs. Lester A. Wilson and Arthur L. Rivers, Charleston, Eclampsia.

The South Carolina X-Ray Society will hold its annual meeting May 18 in Myrtle Beach, with James L. Weatherwax, A.M., University of Pennsylvania, Philadelphia, as the guest speaker.

TENNESSEE

State Society Election.—Dr. Tom R. Barry, Knoxville, was elected president of the Tennessee State Medical Association at the annual meeting in Nashville April 12-14. Vice presidents elected were Drs. William S. Rude, Ridgetop; William A. Garrott, Cleveland, and John Jackson, Dyer. Next year's session will be in Jackson.

Personal.—Dr. William J. Murphy, Kingsport, assistant health officer of Sullivan County, has been appointed to the staff of the state department of health for work in venereal disease control, newspapers have reported.——Dr. Kendall B. Corbin, Stanford University, Calif., has been appointed associate professor of anatomy and histology at the University of Tennessee School of Medicine, Memphis.

WASHINGTON

Society News.—A program on tuberculosis was presented before the King County Medical Society, Seattle, April 18, by Drs. Armin C. Rembe, Byron F. Francis, Harold E. Nichols and Herbert L. Hartley.——Drs. Bernard P. Mullen and John A. Duncan, Seattle, addressed the Chelan County Medical Society March 9 on "Management of Abdominal Adhesions" and "Nonpenetrating Abdominal Injuries" respectively.——Drs. Homer D. Dudley, Seattle, and John C. Lyman, Walla Walla, addressed the Spokane County Medical Society, Spokane, April 14, on "Treatment of Primary Injuries of the Hand" and "So-Called Regional Ileitis" respectively.——Drs. Roger Anderson and John A. Duncan, Seattle, addressed the Cowlitz County Medical Society, Longview, March 17, on "Fractures of the Upper and Lower Extremities" and "Abdominal Injuries, Diagnosis and Treatment" respectively.——Dr. John G. Cheetham, Portland, addressed the Grays Harbor County Medical Society, Aberdeen, March 3, on "Newer Concepts in the Gonorrhea Problem: Triphasic Treatment by Use of Local Therapy, Sulfanilamide and Hyperpyrexia Combined."——Drs. Guy E. Griffith and William H. Ludwig, Tacoma, addressed the Pierce County Medical Society, Tacoma, March 8, on "Attempts to Correlate Conflicting Ideas of Sinus Surgery and Multiple Sclerosis in Retrobulbar Neuritis" and "Submucous Resection of the Nasal Septum" respectively.

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GENERAL

Twenty-Fifth Anniversary of Cancer Society. — The American Society for the Control of Cancer celebrated the twenty-fifth anniversary of its founding with a dinner at the Hotel Ambassador March 25. Among the speakers were Drs. James Ewing, New York; Ellis Fischel, St. Louis, and Bowman C. Crowell, Chicago. Clarence C. Little, Sc.D., Bar Harbor, Maine, managing director of the society, presided. Dr. John J. Morton Jr., Rochester, N. Y., was elected president and Dr. George M. Smith, New Haven, Conn., vice president.

Public Health Association Invites Physicians to Portland Meeting.—The annual meeting of the Western Branch of the American Public Health Association will be held in Portland, Ore., June 6-8. The secretary, Dr. William P. Shepard, 600 Stockton Street, San Francisco, suggests that physicians attending the annual session of the American Medical Association in San Francisco June 13-17 may wish to attend the public health meeting and remain in Portland for the Rose Festival which immediately follows. Inquiries may be addressed to Dr. Shepard or William Levin, Dr.P.H., 816 Oregon Building, Portland. Dr. Shepard notes that the railroad fare from the East to San Francisco via Portland is the same as to San Francisco direct.

Society News.—Two sessions of the sixteenth annual Midwest Safety Conference at the Hotel Sherman, Chicago, May 17-19, will be devoted to consideration of occupational disease. Among the speakers will be Drs. Alice Hamilton, Hadlyme, Conn., health hazards in materials used in painting; Arbie L. Brooks, Detroit, health hazards in the use of solvents in metal cleaning; Milton H. Kronenberg, Chicago, inspection of plants for health hazards, and Clarence O. Sappington, Chicago, who will conduct a "question box luncheon."——Dr. Herbert Fay H. Jones, Little Rock, Ark., was named president-elect of the Mid-South Postgraduate Medical Assembly at its annual meeting in Memphis, Tenn., February 15-18. Vice presidents elected were Drs. Lawrence W. Long, Jackson, Miss.; Ernest J. Horner, Jonesboro, Ark., and Otis Whitlow, Savannah, Tenn. Dr. Robert M. Adams, Ripley, Miss., is president.

American Neisserian Medical Society. — The fourth annual session of the American Neisserian Medical Society will be held in Washington, D. C., May 16-17 at the U. S. Public Health Service building. The first morning will be devoted to a symposium on sulfanilamide, with Dr. Perrin H. Long, Baltimore, as the guest speaker. In the afternoon there will be the presidential address of Dr. Charles C. Norris, Philadelphia, and the following section meetings: male clinical, female clinical and research and laboratory. Other speakers will be:

Dr. Max L. Brodny, Boston, History of Gonorrhea During the Middle Ages.
Dr. Charles Walter Clarke, New York, Suggestions for Elevating the Standard of Gonorrhea Clinics.
Dr. Nels A. Nelson, Boston, Providing Treatment for the Indigent.
Dr. Raymond A. Vonderlehr and Lida J. Usilton, U. S. Public Health Service, The Epidemiology of Gonorrhea.
Dr. Charles M. Carpenter, Rochester, N. Y., The Effect of Gonotoxin on Mice and Its Neutralization with Antitoxin.

American Congress on Obstetrics and Gynecology.—Plans for an American Congress on Obstetrics and Gynecology in Cleveland during the week of Sept. 11, 1939, have been announced. Dr. Fred L. Adair, Chicago, is general chairman and Dr. James R. McCord, Atlanta, Ga., is secretary of the congress. The directors of the American Committee on Maternal Welfare are the governing body. They are Drs. Leroy A. Calkins, Kansas City, Mo.; Robert L. DeNormandie, Boston; George W. Kosmak, New York; Robert D. Mussey, Rochester, Minn.; Everett D. Plass, Iowa City, and Philip F. Williams, Philadelphia. The congress is to be organized to meet the interests of various groups, including practicing physicians, medical educators, nurses, public health workers, hospital administrators and others interested. Morning sessions will be reserved for group meetings and the afternoons for general discussions. Evening sessions will be arranged for the public. There will be scientific and commercial exhibits. Inquiries may be addressed to the general chairman at the executive office, 650 Rush Street, Chicago.

Winners in Traffic Safety Contest. — Memphis, Tenn., won the national grand prize in the sixth national safety traffic contest sponsored by the National Safety Council for the calendar year 1937. The award was made in recognition of the city's comprehensive safety program as well as its safety record. Memphis had thirty-four traffic deaths, as compared to fifty in 1936 and an average of forty-eight for the three years preceding 1937. The cities that won first places in their population groups were as follows: Milwaukee, cities with 500,000 or more; Hartford, Conn., cities of from 100,000 to 250,000; Beaumont, Texas, and Sacramento, Calif., tied among cities of from 50,000 to 100,000; Everett, Wash., 25,000 to 50,000, and Des Plaines, Ill., 10,000 to 25,000. There were 113 cities with populations between 5,000 and 10,000 that went through 1937 without a traffic death. Massachusetts won the grand prize among states because of its low death rate, 9.6 per ten million miles traveled as compared with a national average of 15.9; its reduction from previous years and its program of safety activities. Bronze plaques were presented to the winning cities and states at a dinner in Washington, D. C., April 12.

Health Among Industrial Policyholders. — A new low mortality rate was established in 1937 by the 17,700,000 industrial policyholders of the Metropolitan Life Insurance Company, according to a recent report in the *Statistical Bulletin*. The rate for all causes was 8.221 per thousand insured lives, the lowest ever recorded by the company. New low records were reported for eight causes: typhoid fever, scarlet fever, tuberculosis, chronic nephritis, diseases arising out of pregnancy and childbirth, homicides, accidental burns and railroad accidents. In this group the tuberculosis mortality continued to drop, contrary to expectations. The 1937 rate was 51.3 per hundred thousand, compared with 54.3 for the previous year. Typhoid for the first time dropped below 1 per cent, with a rate of 0.9. Heart disease was the leading cause of death, but the rate was slightly less than that for 1936, 157 as compared with 161; it was found that the rate was declining among young persons. Cancer stood second on the list with a rate of 94.1, compared with 93.9 for the previous year. Diabetes set a new maximum rate of 25 per hundred thousand. The suicide death rate was 8.8, a continued drop since 1932, when the rate was 10.6. The accident rate was the lowest on record for the group of policyholders, 53.6; this was achieved in spite of the increased numbers of wage earners employed and thus exposed to more hazards. Automobile accidents, however, increased by 4 per cent, with a rate of 20.9 as compared with 20.1 in 1936.

Medical Bills in Congress.—*Bills Introduced.*—S. 3914, introduced by Senator Barkley, Kentucky, proposes to provide, in addition to the annual sum of $3,800,000 now available, the following sums for extending and improving maternity care and the care of infants: for the fiscal year ending June 30, 1939, $3,000,000; for the fiscal year ending June 30, 1940, $8,000,000; for the fiscal year ending June 30, 1941, $12,000,000; for the fiscal year ending June 30, 1942, $16,000,000; for the fiscal year ending June 30, 1943, $20,000,000; and for each fiscal year thereafter, such additional sums as may be needed. H. R. 10442, introduced by Representative O'Day, New York, proposes to amend the Social Security Act by striking from it the exemptions in favor of corporations, community chests, funds or foundations organized and operated exclusively for religious, charitable, scientific, literary or educational purposes, or for the prevention of cruelty to children or animals. H. Res. 473, submitted by Representative Scott, California, proposes to create a House select committee to (1) inquire into the organization, objectives and activities of Group Health Association, Incorporated, of the District of Columbia, from the point of view of its effect on medical ethics and the economic soundness and social desirability of this plan of operation, and (2) inquire into the activities of the American Medical Association, and of state and county medical societies in relation to Group Health Association, Incorporated. H. Res. 475, submitted by Representative Shafer, Michigan, proposes to create a House select committee to inquire into the organization and activities of Group Health Association. H. Res. 476, submitted by Representative Shafer, Michigan, provides that whereas Group Health Association, organized to provide medical care for government employees, obtained from the Home Owners' Loan Corporation $40,000 of the taxpayers' money to defray operating expenses; and whereas this expenditure of $40,000 by the Home Owners' Loan Corporation has been declared illegal and improper by the Comptroller General of the United States, the Appropriations Committee of the House of Representatives and the United States district attorney; and whereas Group Health Association and the Home Owners' Loan Corporation have refused to take cognizance of the rulings that this expenditure is illegal and improper: Be it resolved, that the Attorney General of the United States be instructed immediately to take necessary legal action to recover for the United States Treasury this sum of $40,000.

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Foreign Letters

LONDON

(From Our Regular Correspondent)

April 9, 1938.

The Treatment of Anterior Poliomyelitis

At a meeting of the Manchester Medical Society, Dr. R. W. Brookfield discussed the treatment of anterior poliomyelitis. Apart from its value in diagnosis, he said that lumbar puncture was a useful therapeutic measure; the increased intracranial pressure was diminished and the symptoms were often relieved, particularly with regard to meningeal irritation. There was some experimental justification for giving methenamine, as it had been recovered from the cerebrospinal fluid and had prevented the onset of paralysis in monkeys. Convalescent serum had been extensively used and the serum of many adults who had not suffered from the disease had similar or greater protective power. In the earlier reports the verdict was almost invariably favorable to serum treatment, but controls were lacking. Figures of the epidemics in the United States in 1927-1928 and in Manitoba in 1928 seemed to show a definitely favorable effect, but the figures of W. H. Park for the New York epidemic of 1931 showed no appreciable influence on the course of the disease. If the virus gained access to the nervous system along the olfactory nerves and then traveled in the nervous system along the axis cylinders, as the work of Hurst and others suggested, it was comprehensible that antibodies introduced into the blood or cerebrospinal fluid had little chance of establishing contact with the virus once infection had taken place. But Brookfield would not take the responsibility of neglecting serum treatment in such a grave disease. Once paralysis had supervened, the problem of treatment became increasingly orthopedic. The accepted treatment was rest of the limb by means of light splints and prevention of stretching of the paralyzed muscles.

The Promotion of Physical Development

In opening a discussion at a meeting of the section of physical medicine of the Royal Society of Medicine, Lord Dawson, president of the Royal College of Physicians, said that proficiency in games often existed with deficiency of frame and function. Also games, unless correlated with basic physical training, could inflict overstrain. Sports and games were the fulfilment of physical training and should rest on it, for planned physical exercises increased the strength, control and response of the body. Moreover, physical training developed certain qualities which were basic to sound physical education—posture, poise, flexibility and rhythm of movement and efficient respiration. The government had decided to establish a national school of educative and recreative training, and the board of education is actively concerning itself with the realization of that project. In it teachers of anatomy and physiology will work side by side with teachers of physical training. The total functional value of the individual will be studied, having regard to his makeup and environment.

Physical education would need the guidance of trained physicians. In the future those who aspired to be medical officers of schools would require to include in their training a knowledge of physical education. Other measures recommended by Lord Dawson were to push to the forefront the best of our youth, who would create a standard for their own generation, to consider the granting of loans (as in Germany) to medically approved marriages, the obligation to repay being reduced on the birth of each child, and to institute motherhood clinics. In short, we should plan for quality. When posts were to be filled by competitive examination, this should include tests not only for mind but also for body.

A Sealed Faraday Document Opened After a Hundred Years

In 1832 Michael Faraday deposited a sealed letter with the Royal Society, which has just been opened. At the time he wrote the letter only the most elementary facts were known about magnetism and electricity. Electric bells and telegraphs were unknown and it had been discovered only a few years previously that magnetism could be produced by electricity. Faraday argued that conversely it should be possible to produce electricity from magnetism. For nearly seven years his experiments were unsuccessful until in 1831 the reason of his failures became apparent. Then in a few days he made a series of brilliant researches from which the whole science of electricity and magnesium developed. He found that an electric current was generated whenever a conductor was moved toward or away from a magnet. He was led to conclude that "magnetic action is progressive and requires time for its transmission." This was a revolutionary theory—the instinctive deduction of a brilliant experimentalist—which he could not prove. But he was so sure of its truth that he took the unusual course of depositing a sealed statement of his views with the secretary of the Royal Society, in whose safe it has since remained. In it he wrote "I am inclined to compare the diffusion of magnetic forces to the vibrations on the surface of disturbed water or those of air in the phenomena of sound. . . . These views I wish to work out experimentally, but as the experiments may in their course be subject to the observation of others, I wish, by depositing this paper in the care of the Royal Society, to take possession, as it were, of a certain date, and so have right, if they are confirmed by experiments, to claim credit for the views at that date." Maxwell proved mathematically in 1865 that electromagnetic phenomena are propagated through space in the form of a wave motion with the velocity of light, but it has not been previously known that Faraday was the original author of the theory in 1832. The theory remained unconfirmed experimentally until Hertz showed in 1888 how to produce and detect electromagnetic waves. It is universally recognized that Faraday was the greatest experimentalist that the science of electricity has known, but here is a new proof of his genius. His unerring instinct in conceiving the time factor and the wave theory, which he had no means of proving, is amazing.

PARIS

(From Our Regular Correspondent)

April 9, 1938.

Early Diagnosis of Gastric Cancer

An effort is being made at the clinic of Prof. A. Gosset of Paris to recognize cancer of the stomach at the onset. A team has been organized which includes, besides the surgeon, a radiologist, an internist and a pathologist who have intensively studied the question of the earliest stages of gastric cancer for years. At the March 11 meeting of the Société médicale des hôpitaux a case of incipient gastric cancer was reported by Professor Gosset and his co-workers Drs. Guttmann, Bertrand and Garcia-Calderon. This case forms one of a series reported during the last eighteen months. Although invisible on gross examination at operation, the diagnosis of gastric cancer could be readily made microscopically. A woman aged 58 had noticed digestive disturbances during the preceding six or seven months, becoming very marked during the four months before being first seen by Professor Gosset in October 1937. Radiography revealed in the prepyloric region of the stomach a change in the outline which Dr. René Guttmann has termed "niche en plateau," which can be translated as a shallow niche. It was about 1 cm. long and sharply outlined. Although a diagnosis of malignancy was made on the basis of the radiographic examination, the patient was

given the benefit of medical treatment for a period of three weeks in order to exclude a cancer, because a consultant had been skeptical with regard to the diagnosis of malignancy. The films following this period of medical treatment failed to show any changes in the region of the niche. At operation the stomach and duodenum were inspected and palpated but nothing abnormal was found. A gastrectomy was performed by Professor Gosset. On gross examination of the entire lesser curvature of the specimen, neither an ulceration nor an induration could be detected. Microscopic study, however, by Dr. Ivan Bertrand of serial sections from 6 to 8 cm. long of the entire pyloric and prepyloric region disclosed a diffuse gastritis of an atrophic and in places of an erosive type. In one of the sections close to the lesser curvature a slightly depressed area 1 cm. in length was found which presented the changes characteristic of malignancy. A detailed description of these changes was submitted with the report.

Association of Pulmonary Abscess and Tuberculosis

Prof. F. Bezançon and his associates at the March 8 meeting of the Académie de médecine reported thirteen recent cases of active tuberculosis in patients suffering from pulmonary abscess formation. The object of the authors was to direct attention to cases in which the positive result of the routine search for tubercle bacilli by the smear, culture and animal inoculation methods is the only evidence of the association of the two pathologic conditions as compared to severe forms of pulmonary tuberculosis in which the occurrence of abscess formation due to nontuberculous organisms is a coincidence. The tuberculosis may develop at the site of the abscess at the time of formation of the latter, or it may appear relatively late following prolonged suppuration and be present at some distance from the abscess on the same or opposite side of the body. The routine use of radiography in different positions reveals latent tuberculous lesions which are not to be found in the ordinary dorsal and frontal views. Tubercle bacilli are to be found in abscess of the lung even when gross and microscopic evidence of tuberculosis is not present. An associated tuberculosis is most frequently found either during the acute stage of a pulmonary abscess or close to the scar which represents a healed suppurative focus. When tuberculosis develops at a late period of abscess formation the question arises whether the lung, modified by the sclerotic changes incident to the healing of the abscess, had not lost its power of resistance and thus favored localization of the tubercle bacillus. The authors pointed out that it is important clinically to distinguish the two types of tuberculosis in cases of pulmonary abscess. The mere presence of tubercle bacilli in cases of the pulmonary abscess does not serve as a contraindication to operative intervention, whereas active tuberculosis associated with a pulmonary abscess is a contraindication to operation.

Medical Examination of Chauffeurs

Reference was made in previous letters to the report of a commission appointed by the Académie de médecine of Paris on the extension of the obligatory medical examination to all drivers of passenger cars. An existing law already covers chauffeurs of motor trucks, busses and electrically driven locomotives. The discussion of Professors Claude and Guillain was cited in the Paris letter of February 12 (THE JOURNAL, March 12, p. 825). At the March 8 meeting additional points were brought out during a continuation of the discussion. Dr. Fredet said that one cannot deny that certain physical and mental defects of chauffeurs constitute a danger for the public. However, to insist on a complete obligatory medical examination for every one who is to be granted a driving license would give rise to far more work than can be estimated at first glance. This had already been pointed out by Professor Claude. The number of accidents due to road conditions and mechanical defects are decreasing every year, whereas the opposite is true of the human factor. The majority of accidents at the present time are the result of neglect to comply with the regulations as to speed, careful approach to street and railroad crossings and disregard of traffic lights. A compulsory medical examination would be of aid only in decreasing the number of accidents due to the last named factor, which in many cases is the result of color blindness. According to statistics, at least 5 per cent of all males suffer from color blindness. This gives one an idea of the number of chauffeurs who cannot distinguish the color of signal lights, especially toward evening or during a fog in a large city. To reduce accidents due to color blindness to a minimum, the speaker suggested that a single color be employed to indicate Go and two colors to indicate Stop. The color blind chauffeur would then know, when he saw two colors, no matter which, that this indicated Stop.

Another criticism of the present signal system in Paris, which exists also in many other large cities, is that the yellow light which flashes between the red and the green is of such short duration that many pedestrians are caught on the street because they began to cross during a stop signal for automobiles but were unable to reach the other curb before the go light again functioned. In some cities a special light is used to indicate the interval during which pedestrians can cross a street.

In continuing the discussion, Dr. Strohl said that accidents occurred even though a strict medical examination had been made. He cited the case of a locomotive engineer who had undergone such an examination before being employed in that capacity. Following his acceptance he had several attacks of epilepsy, from which he had apparently never suffered before. Of 26,654 accidents from 1930 to 1932 inclusive in ten departments (counties), only seventy-five were the result of a mental or physical defect.

At the conclusion of the discussion, the report of the committee to recommend obligatory examination of all drivers of passenger cars was unanimously adopted.

BERLIN

(From Our Regular Correspondent)

March 14, 1938.

Earlier Puberty of German Youth

In recent years, numerous references to an acceleration in the puberal development of both sexes have appeared in the literature of various countries. Medical examinations in the German army have likewise disclosed a tendency toward more rapid growth. For example, at about the turn of the century about 15 per cent of the men were less than 160 cm. in height whereas in the year 1935 only 7.5 per cent of the men were below this height. Similarly, around 1900 the height of 1.6 per cent of the men exceeded 180 cm., and in 1935 5.4 per cent were above this height. Corresponding shifts have also taken place at the intermediate levels of height. Some German authors have adduced evidence which indicates that among the youth there has been a general increase not only in height and weight but in general bodily development as well. For example, an increasingly large percentage of children are able to walk before the end of the first year, in marked contrast with former times. Dentition, both primary and secondary, also appears to begin earlier in life. Moreover, the time at which boys' voices break has been advanced from one to two years. In Westphalia the onset of puberty was observed in the year 1933 to occur about one and a half years earlier than in 1914. According to investigations made in the year 1913, 50 per cent of girls began to menstruate between the fourteenth and sixteenth years, only 13 per cent between the eleventh and the thirteenth years, and 27 per cent between the seventeenth and nineteenth years.

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The most recent group survey of pubescence was made by Dr. Hans Oster, senior municipal medical counselor of Nuremberg, who reports his observations in the *Oeffentlicher Gesundheitsdienst*. Oster's material consisted of 15,000 children. Of 8,000 girls 12.3 per cent had menstruated before they were 12 years of age, 32.2 per cent before the age of 13, 59.1 per cent before the age of 14. All the Nuremberg girls had begun to menstruate before reaching the age of 17. It may therefore be said that by and large girls mature on an average from one to one and one-half years earlier than they did in the last years of the prewar period. Among the 6,000 boys studied, breaking of the voice, appearance of other secondary sex characteristics and certain behavior traits were evaluated as signs of puberty. As among the girls, there was a tendency toward earlier prepubescence. On the basis of older data the average time of onset of puberty in boys had been placed between the fourteenth and sixteenth years. Oster found that the earliest established pubescence in the boys of his material occurred between the ages of 11 and 12; more than one third of the boys had become pubescent before they had reached the age of 13, nearly three fourths before the age of 14 and more than four fifths before the age of 15. So it may be said that the onset of male puberty has been advanced about one and one-half years. As to whether this earlier maturation of the youth should be regarded as a favorable or unfavorable phenomenon, the present state of knowledge does not permit a conclusion.

Alcohol and Safe Driving

Professor Sachsenberg has conducted a series of new blood tests at Dresden which bear on the problem of alcohol and safe driving. A summary of his observations follows: In Germany an alcohol value of 1.5 per thousand in the blood is generally considered proof that the person is under no circumstances in condition to drive. But in Norway, for example, the corresponding alcohol content is fixed at 0.5 per thousand. At the Psychotechnic Institute of the College of Technology, Dresden, the author, in collaboration with engineers, psychologists and physicians, attempted to determine how great an alcohol content of the blood would produce physical impairment incompatible with the safe direction of a motor vehicle. Such an impairment was assumed if the driver in question while under the influence of alcohol was observed to drive more recklessly than 90 per cent of all normal drivers. A large group of automobile drivers and nondrivers as well volunteered for participation in the driving tests and blood examinations. In the accompanying table are set forth the percentages of persons judged incapable of driving safely after partaking of alcohol, and the corresponding alcohol values of the blood which rendered them unfit.

Alcohol Content of Blood, Per 1,000	Drivers Incapacitated, Per Cent
0.2	20
0.4	40
0.5	49
	(About 2½ small bottles of beer)
0.6	58
0.7	66
0.8	75
0.9	80.5
1.0	87.5
1.1	90
1.2	93
1.3	96
1.4 and over	100
	(About 2 bottles of moderately heavy Rhine wine)

According to these data, one half of all drivers are incapable of safe driving after imbibing from two to three small bottles of beer. And after finishing two bottles of moderately heavy Rhine wine scarcely any one can be responsible for the guidance of a motor vehicle. There are exceptions, of course, especially at the level of a 1 per thousand alcohol content in the blood, but these can be carefully verified by psychotechnic examination methods. Broadly speaking, one can conclude on the basis of these experiments that drivers should be warned against ingestion of even trifling amounts of alcohol before beginning a trip.

Prof. Max Neisser Is Dead

Prof. Dr. Max Neisser, for many years professor of hygiene and bacteriology at Frankfort on the Main, died there, aged 69. He was particularly well known for his bacteriologic work on the differential diagnosis of the diphtheria bacillus and on staphylococci. The phenomenon of deviation of the complement (Neisser-Wechsberg phenomenon) bears his name, as does a complement binding reaction for biologic differentiation of proteins (Neisser-Sachs method). He also made valuable contributions to knowledge of the mutation of bacilli.

ITALY

(From Our Regular Correspondent)

March 15, 1938.

Uniform Medical Fees

The head of the government has issued a decree which establishes a nationally uniform scale of medical honorariums. The amounts stipulated represent the minimal fees deemed compatible with professional dignity and no practitioner may ask less for his services unless his client is the father of a family who has five or more dependent children and who, accordingly, is entitled to a 20 per cent reduction. The scale for professional visits to a patient's residence are as follows: first call, 20 lire; successive calls, 15 lire each; emergency call, day 25 lire, night 40 lire; consultation at patient's home, 30 lire for the attending physician, 60 lire for the consultant. Corresponding rates are fixed for surgical, obstetric and gynecologic services. Another decree soon to be issued will regulate the honorariums of specializing physicians.

Nomenclature of Medical Institutions and Offices

The minister of the interior has issued regulations to end the commercial exploitation (in advertising and so on) of medical institutions, offices and the like. The new law stipulates that the terms "clinica" and "policlinico" may be applied only to institutions connected with the university medical schools; private institutions of a medical nature should be styled "case di cura" (nursing homes) or "case di salute" (sanatoriums). The term "istituto" can now be applied only to a center of many coordinated activities the aim of which is predominantly scientific, cultural or educational; it must not be applied to case di cura or to mere medical offices. The term "studio" (laboratory) must be applied only to premises dedicated to clinical research studies and implies the presence of proper equipment for laboratory examination. The term "gabinetto" (office), since it implies merely premises equipped for ordinary clinical examination and treatment of patients, may be applied to the office of a general practitioner. The term "poliambulanza" (general or municipal outpatient infirmary) must be restricted to premises given over to more specialized procedures.

The Bulgarian Therapy of Parkinsonism

Professor Gandellini of Pavia recently reported to the medical society on the use of Bulgarian therapy in encephalic parkinsonism. The author studied the Buscaino reactions of 104 persons. In the more severe forms, those characterized by hyperemia and hypertonia, the precipitate was usually grayish. Other reactions in order of frequency were brown and black. In half of the moderately severe cases the precipitate was gray. After the Bulgarian therapy was begun not only were the neurologic symptoms improved but modifications were observed in the Buscaino reaction as well; cases in which dark precipitates had been elicited at previous tests tended to give lighter or clear reactions.

The author also studied the blood pictures in ninety cases of parkinsonism which later underwent Bulgarian treatment. Tests of capillary blood, venous blood and medulla ossium were the three criteria applied. In the capillary blood prior to treatment, certain phenomena were observed: general abnormal increase in globular values, an almost normal proportion of leukocytes and blood plates, a slight reticulosis, plain dextrad deviation of Arneth's formula frequently in combination with neutrophilia and lymphopenia, discrete eosinophilia. Some time after the beginning of treatment (the maximal period of observation was three years) the author noted that the globular values tended to become stationary and the white globules tended to diminish; there was also a reduction in the number of neutrophils and monocytes, and an increase in lymphocytes and eosinophils. The author considers that the hematologic characteristics of encephalitic parkinsonism justify the supposition of an automatic, humoral regulation of the blood count. The Bulgarian therapy produces clinical amelioration of the neurologic symptoms and also brings with it favorable changes in the blood picture.

Congress of Obstetricians and Gynecologists

The Società Italiana di ostetricia e ginecologia held its thirty-fourth national convention in Rome. Professor Artom of Sant'Agnese clinic was chairman of the executive committee. Professor Jayle represented the Société française de gynécologie and Professor Stamatev of the obstetric clinic, Sofia, represented the gynecologists of Bulgaria.

Professor Gaifami, director of the Clinica di Roma, called attention to the need for a better coordination of extant maternal and infant welfare agencies. A hygienic program should be worked out that would assure adequate supervision and timely care of the mother during pregnancy, parturition and the puerperium, as well as care of the newborn infant. Such a program would go far to reduce morbidity and mortality of both mothers and babies. It cannot be realized, however, until the medical schools and the hospitals furnish better training in obstetrics and gynecology. The author advocates the establishment of special residence units for prospective obstetricians; the training of the students should be better coordinated with that of the resident students at the pediatric clinics. Compulsory insurance of the gravid woman should be extended throughout the population and eventually become totalitarian. Likewise a closer collaboration is to be encouraged between gynecologists and pediatricians in the study of diseases of the prepuberal female genitalia, as the present lack of understanding of these disorders often conduces to impaired health of the adult woman.

The first formal report was submitted by Professor Cova of Turin; his subject was nutrition of the pregnant woman. Methodical studies of the increase in body weight of pregnant women at the Turin clinic demonstrated that in the late months of gestation primigravidas experience a mean gain of 50 Gm. per diem, plurigravidas a mean gain of 70 Gm. per diem. Basal metabolism is always at least 20 per cent and sometimes as much as 50 per cent above normal; it is estimated that an expectant mother will require a daily intake of 3,000 calories. Any study of the qualitative physiologic equilibrium must take into account above all the presence in the nutriment of essential amino acids, vitamins, phosphates and calcium. These salts are needed for the development of the fetal skeleton. Vitamin A deficiency easily leads to abortion or premature parturition. Lack of vitamins of the B group inhibits intra-uterine fetation. Vitamin C, the antiscorbutic, controls the metabolism of the osseous skeleton and preservation of the teeth and besides stimulates the production of blood platelets. It acts indirectly on the coagulative powers of the blood, and this may be of utmost importance during the postpartum period. Vitamin D, the antirachitic vitamin, is of importance because of its value in calcification. Vitamin E, the antisterility vitamin, exerts an influence on the continuation of pregnancy.

In the discussion of Cova's paper, Professor Foà, Milan physiologist, said that in general the evaluation of the protein requisites of the gravida may be exaggerated; he estimated that about 20 Gm. was sufficient for a normal gravida.

Courses in Puericulture

The minister of public instruction has decreed that all girl pupils in secondary schools shall be offered courses in the care of infants and in puericulture. This program is a pendant to the present compulsory military training of boys of secondary school age. The purpose of the new courses will be to familiarize girls with (1) the duties of the woman in the upbringing of the family and in the prevention of sickness (since the health of a people depends on how well these duties are performed), (2) hygiene as the source of individual and national health and (3) hygiene of the nursling and training of the child. The courses will be conducted by professors on the staffs of various centers for maternal and child welfare. In addition to the classroom lessons, opportunity will be offered for practical training.

Alessandro Lustig Is Dead

Senator Alessandro Lustig, professor emeritus of general pathology in the University of Florence, died unexpectedly at Marina di Pietrasanta. Lustig held doctoral degrees from both Vienna and Turin and he was a pupil of Brücke and of Bizzozero. While quite young, he won a competitive examination for the chair of general pathology at Cagliari. From there he was called to Florence, where he taught for more than forty years and founded a school that has given more than twenty eminent men to the scientific institutions of Italy. A volunteer in the World War, he saw front line service as colonel in the medical corps. It was Lustig who organized the antigas defense in the Italian army. Following his retirement from teaching he continued to head a center at Florence for research on defense against chemical warfare.

Lustig's scientific activity was prodigious. Of far-reaching importance were his morphologic-bacteriologic investigations of cholerigenous Vibrio and of anticholera and antityphoid inoculation. In collaboration with Galleoti he demonstrated the presence of Flemming's intermediary body in carcinoma cells. In the field of bubonic plague research he demonstrated by experiments with human and animal subjects that the nucleoprotein of Pasteurella pestis is an excellent vaccinal medium. As chairman of a ministerial commission for the study of pellagra, Lustig worked out a program of school hygiene and prophylaxis of this disease, which at that time was endemic in certain regions of Italy. Lustig went to India at the invitation of the British government on the occasion of an epidemic of bubonic plague there. He also fulfilled similar missions to Brazil and Argentina, where he studied malaria, leprosy and undulant fever.

Lustig was for many years editor of the scientific journal *Lo sperimentale*, which came to be devoted to the literature of biology and which gained world-wide recognition as an *Archivio di biologia normale e patologica*.

Marriages

WILLIAM EMMETT DENMAN JR., Greenwood, Miss., to Miss Sal Whitaker of Greenville in February.

ISAAC HAYNE, Congaree, S. C., to Miss Sue Stevenson of Columbia in Denmark, February 8.

ROY O. HAWTHORNE to Miss Louise P. Bidwell, both of Kankakee, Ill., in February.

HARRY H. JENKINS to Miss Varina Mayo, both of Knoxville, Tenn., February 19.

BLANCHE HORNER MULDOON to Mr. A. L. Bach, both of Pico, Calif., recently.

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Deaths

Claude Granville Crane, Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1900; member of the Medical Society of the State of New York, and American Laryngological, Rhinological and Otological Society; in addition to serving on various committees he was secretary of the Medical Society of the County of Kings, 1911-1913; fellow of the American College of Surgeons; on the staff of the Brooklyn Hospital and the Brooklyn Eye and Ear Hospital; aged 61; died, February 27.

James Robert Dykes ✠ Surg., Lieut. Commander, U. S. Navy, retired, Marshallville, Ga.; University of Virginia Department of Medicine, Charlottesville, 1897; entered the navy in 1903 and retired in 1915 for incapacity resulting from an incident of the service; formerly health officer of Grady County and Thomas County; aged 64; died, February 20, of heart disease.

William W. York, Ashdown, Ark.; Memphis (Tenn.) Hospital Medical College, 1901; member of the Arkansas Medical Society; past president of the Little River County Medical Society and the State Medical Board of the Arkansas Medical Society; aged 61; died, February 3, in a hospital at Texarkana of injuries received in an automobile accident.

Harold Bertram Hedrick ✠ Kansas City, Mo.; University Medical College of Kansas City, 1913; member of the American Academy of Ophthalmology and Oto-Laryngology; served during the World War; aged 47; on the staffs of the Trinity Lutheran, Kansas City General, St. Luke's and Mercy hospitals and St. Mary's Hospital, where he died, February 21, of cerebral hemorrhage.

John Pierce De Witt ✠ Canton, Ohio; Cleveland College of Physicians and Surgeons, Medical Department of the University of Wooster, 1895; member of the House of Delegates of the American Medical Association since 1923; fellow of the American College of Surgeons; on the staff of the Aultman Hospital; aged 67; died, March 29, of cerebral hemorrhage.

Ezra T. Goble ✠ Earlville, Ill.; Rush Medical College, Chicago, 1874; an Affiliate Fellow of the American Medical Association; past president of the La Salle County Medical Society; for many years member and president of the school board; formerly mayor of Earlville and bank president; aged 87; died, February 23, of chronic myocarditis.

William Alfred Buice, Chelsea, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1930; formerly director of laboratories at the Eastern State Hospital, Medical Lake, Wash.; past president of the Washington State Public Health Association; aged 47; died, February 3, in Santa Monica, Calif., of coronary thrombosis.

William Allen Prouty, Burlington, Wis.; Rush Medical College, Chicago, 1893; member of the State Medical Society of Wisconsin; served during the World War; for many years county physician; at one time city health officer of Burlington; formerly on the staff of the Memorial Hospital; aged 75; died, February 5, of pyelonephritis.

William Hazen Freeman, Ashland, N. Y.; Chicago Homeopathic Medical College, 1900; member of the Medical Society of the State of New York; formerly associate professor of materia medica at the New York Homeopathic Medical College and Flower Hospital, New York; aged 67; died, February 27, of coronary thrombosis.

Dottery Holden Ward, Bay St. Louis, Miss.; University of Tennessee College of Medicine, Memphis, 1914; member of the Mississippi State Medical Association; aged 55; died, February 5, in a hospital at Gulfport of burns received when a gasoline heater in his office exploded.

Joseph Gugenberger, Worcester, Mass.; Long Island College Hospital, Brooklyn, 1932; member of the Massachusetts Medical Society; served during the World War; aged 44; on the staff of the Worcester City Hospital, where he died, February 28, of lobar pneumonia.

Harry E. Wilkins, Petersburg, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1893; member of the Illinois State Medical Society; formerly mayor, county coroner and member of the local board of education; aged 72; died, February 22, of myocarditis.

Abram Miller ✠ Kansas City, Mo.; Washington University School of Medicine, St. Louis, 1895; at one time professor of materia medica, University Medical College of Kansas City; on the staff of St. Joseph Hospital; aged 63; died, February 12, of coronary occlusion.

J. W. Kenward Shaw, New Iberia, La.; College of Physicians and Surgeons, Baltimore, 1887; member of the Louisiana State Medical Society; formerly parish coroner and member of the school board; aged 73; died, February 13, of angina pectoris.

Pringle George Tait ✠ Toledo, Ohio; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1900; served during the World War; aged 62; on the staff of St. Vincent's Hospital, where he died, February 16, of bronchiectasis.

Archibald John Valleau, Morrisville, Vt.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1891; member of the Vermont State Medical Society; aged 71; on the staff of the Copley Hospital, where he died, February 18.

Jefferson Gillum Smith, McDonough, Ga.; Atlanta College of Physicians and Surgeons, 1899; member of the Medical Association of Georgia; past president of the Henry County Medical Society; aged 61; died February 5, of cancer of the bone.

Frank J. Spilman ✠ Connersville, Ind.; Medical College of Ohio, Cincinnati, 1897; past president of the Fayette-Franklin County Medical Society; aged 65; died, February 7, in a hospital at St. Petersburg, Fla., of intestinal hemorrhage.

Harry Stearns Platts, Troy, N. H.; Dartmouth Medical School, Hanover, 1898; member of the New Hampshire Medical Society; served during the World War; aged 61; died suddenly, January 7, of coronary thrombosis.

Nicholas J. Nye, McHenry, Ill.; Memphis (Tenn.) Hospital Medical College, 1899; member of the Illinois State Medical Society; aged 66; died, February 16, in Miami, Fla., of coronary occlusion and arteriosclerosis.

Harry Raymond Thomas, Dallas, Texas; Tulane University of Louisiana Medical Department, New Orleans, 1900; formerly member of the city board of health; aged 59; died in February of coronary thrombosis.

Albert G. Meyer, San Francisco; University of California Medical Department, San Francisco, 1890; aged 68; died, January 1, in the San Francisco Hospital of diverticulitis of the sigmoid and pylephlebitis.

Casimir Francis Pawlicki, San Francisco; University of California Medical Department, San Francisco, 1894; aged 65; died, January 4, in the French Hospital of chronic myocarditis and arteriosclerosis.

B. R. Bradford, Linden, Ala.; Medical College of Alabama, Mobile, 1904; member of the Medical Association of the State of Alabama; aged 55; died, February 21, of bronchopneumonia.

Frank Coleman, Hamilton, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, Ont., 1894; aged 70; died, February 8, in the Hamilton General Hospital.

William Benjamin Brooks, Mohawk, N. Y.; University and Bellevue Hospital Medical College, New York, 1901; aged 62; died, February 3, of cerebral hemorrhage.

Horace A. Reddish, St. Louis; St. Louis College of Physicians and Surgeons, 1908; aged 51; died, February 5, in New Orleans of hypertensive heart disease.

Dominique Francis Gaspard, Montreal, Que., Canada; Laval University Medical Faculty, Montreal, 1918; aged 53; died, February 6, in a local hospital.

Samuel R. Turner, Michigan Center, Mich.; University of Louisville (Ky.) Medical Department, 1888; aged 79; died, February 7, of cerebral hemorrhage.

Ethan St. Clair Milford, Hayward, Calif.; Hering Medical College, Chicago, 1901; aged 66; died, January 19, of myocarditis and cerebral thrombosis.

Manly L. Taylor, Columbus, Ga.; Leonard Medical School, Raleigh, N. C., 1906; aged 56; died, February 6, of cardiac insufficiency and nephritis.

John Arthur Jones, Springfield, Ohio; Jefferson Medical College of Philadelphia, 1890; aged 75; died, January 31, in Dayton of myocarditis.

Louis G. E. Boucher, St. Valerien, Que., Canada; Victoria University Medical Department, Coburg, Ont., 1879; aged 85; died, February 4.

Calvin Eugene Camp, San Pablo, Calif.; Cooper Medical College, San Francisco, 1885; aged 71; died, January 3, of pneumonia.

Walter S. Terhune, Brooklyn; New York Homeopathic Medical College, 1877; aged 84; died, February 10, of myocarditis.

Harry Ballou Bryson, Los Angeles; Cleveland Medical College, 1893; aged 76; died, January 30, of myocarditis.

Annie Wightman Hunt, Providence, R. I.; College of Physicians and Surgeons, Boston, 1884; died, January 23.

Correspondence

STATEMENT ABOUT INFANTILE PARALYSIS

To the Editor:—There is at present no generally accepted preventive of poliomyelitis, nor any effective remedy in the acute stage, other than absolute rest. Complete rest is so important in the early days of this inflammation of the central nervous system that it is usually far better to leave the child in bed at home when the disease is first suspected than to move him any appreciable distance to a hospital, particularly if the move is a fatiguing one.

The early manifestations on which the disease can be suspected are fever, headache, irritability, possibly vomiting, perhaps a tremor in the hands which may cause the patient to spill his glass of water, and in particular a tender rigid spine, which will make it impossible for the child to touch his chin to his knee.

When any considerable proportion of these manifestations are present, a doctor should be called to examine the patient and to draw off and examine some of the spinal fluid to confirm the diagnosis and perhaps relieve the headache, but otherwise the child should be disturbed and moved literally as little as possible. When this is done, three out of four children in whom the disease has progressed to this degree will nevertheless escape the paralysis entirely.[1]

Should a patient acquire any paralysis, particularly involving an extremity, a competent orthopedic doctor should be consulted at once, so that the affected part can be immobilized properly at the earliest moment. For even as early rest of the entire child helps to prevent paralysis, so early rest of a weakened muscle helps to prevent permanent crippling.

This statement has been endorsed by Josephine B. Neal, Sidney David Kramer, William H. Park, Thomas Parran, James P. Leake and the Medical Board of the Willard Parker Hospital.

PHILIP M. STIMSON, M.D., New York.

NOMENCLATURE OF THE VITAMIN B COMPLEX

To the Editor:—With gratitude one reads the comprehensive and authoritative article by Dr. Nelson (The Components of the Vitamin B Complex, THE JOURNAL, February 26, p. 645); but because the article is authoritative it is doubly unfortunate that it should contain two inaccuracies logically followed by a definition of one of the components at variance with the definition as it occurs in the literature. There has been so much confusion in the nomenclature of this group and the group contains so many members that it is absolutely essential to fix one term and only one on each entity wherever possible, if we are to avoid further confusion and to benefit from Dr. Nelson's authority.

In his paragraph on the filtrate factor he says "In attempts to fractionate the whole vitamin B complex, it has been found that if vitamin B_1 and riboflavin are first removed, further fractionation can be accomplished with fullers' earth. The fraction remaining after such adsorption is free from B_6 and has been designated the filtrate factor." This is not correct, as the only definition of the filtrate factor to be found in the literature is that laid down by Lepkovsky and Jukes (*J. Biol. Chem.* **114**:109 [May] 1936), which has not been modified by any other workers who have adopted it. It is given in the title of their paper and reads "the 'filtrate factor' (a water-soluble vitamin belonging to the vitamin B complex and preventing a dietary dermatitis in chicks)." This definition is precise, supplying a name for what is believed to be a single chemical substance.

The second inaccurate statement is that "evidence is accumulating which indicates that a nutritional dermatosis in chicks may be closely related to human pellagra." Suggestive evidence that the two diseases are caused by lack of different factors from the diet was found by Jukes (*J. Biol. Chem.* **117**:11 [Jan.] 1937) and more recently decisive evidence has appeared (Dann, W. J.: *Science* **86**:616 [Dec. 31] 1937. Dann, W. J., and Subba Row, Yellapragada: *J. Nutrition*, to be published) showing that the filtrate factor and the P-P factor are separate chemical entities: the chick dermatosis is not therefore closely related to human pellagra.

Following these two inaccurate statements, Dr. Nelson has logically stated in his definition that the filtrate factor "contains chick dermatosis, blacktongue and P-P factors." Thus he is now extending the definition of the filtrate factor to cover a second factor in addition to that described in the definition heretofore universally accepted by writers on this subject.

W. J. DANN, PH.D., Durham, N. C.

PRESENT STATUS OF NICOTINIC ACID IN THE TREATMENT OF PELLAGRA

To the Editor:—The enthusiastic reception of the report by Elvehjem and his associates on the efficacy of nicotinic acid and its compounds in curing blacktongue and its immediate application to the problem of human pellagra are natural and commendable, but there is reason to believe that this discovery may be exploited before adequate knowledge of essential facts is available.

It would seem justifiable to call attention to paragraphs 7 and 8 of the summary and conclusions of the paper by Spies, Cooper and Blankenhorn published in THE JOURNAL February 26. They emphasize that dosage is yet uncertain and that, while nicotinic acid is potent against the mucous membrane lesions of pellagra, further study is necessary before it can be considered a specific for the whole pellagra syndrome.

Clinical experience in widely separate localities indicates that nicotinic acid causes rapid, even spectacular, improvement and remission in pellagrins in the presence of severe dietary inadequacy. Dosage has varied much and oral and parenteral administration have been effective. Treatment periods have been as short as three days and as long as four months. In general the results have been comparable with those produced by large doses of liver extract except that cutaneous lesions have healed more slowly. The effects on nervous manifestations of the disease are still uncertain.

The permanence of cure produced by nicotinic acid will doubtless depend on the ability of patients to secure an adequate diet or a constant ration of the drug to supplement inadequate diet. Even so it is questionable whether any one supplementary dietary factor will maintain health indefinitely. Spies, Cooper and Blankenhorn observed a relapse after apparent cure (case 6) and I have seen a fulminating febrile relapse two weeks after complete remission secured with nicotinic acid. In both instances the diet was seriously inadequate.

While present evidence is strongly in favor of the assumption that nicotinic acid is the P-P factor of Goldberg, the total number of patients treated is small, probably not exceeding fifty, and the time since treatment was started is short. It is most desirable that minimum effective dosage for cure, maintenance and prevention be determined by the controlled observations of experienced investigators and that the indiscriminate use of nicotinic acid be strongly discouraged until this information is available.

V. P. SYDENSTRICKER, M.D., Augusta, Ga.

1. This proportion varies in different epidemics. In the large epidemic of 1931, approximately 82 per cent of the patients admitted to the Willard Parker Hospital in the preparalytic stage, or five out of six, escaped the paralysis. In other and smaller epidemics the figures have been as low as two out of three.

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Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

CORONARY AND CEREBRAL EMBOLISM AND THROMBOSIS

To the Editor:—How can a blood clot in a plantar vein travel up and plug a coronary artery or a cerebral artery? The foramen ovale was closed. Has this ever been done experimentally on animals? If so, please cite. Just how does this clot pass the pulmonary network? Is a coronary thrombus or embolus the same and caused the same way?

M.D., Maryland.

ANSWER.—It is impossible for a blood clot in a systemic vein to plug a coronary artery or a cerebral artery unless there is a septal defect in the heart. If there is a septal defect and a systemic venous thrombus passes through it, the condition is called paradoxical embolism.

Coronary embolism is rare, in contrast to cerebral embolism.

Coronary occlusion occurs in the great majority of cases either gradually without the production of infarction or suddenly by thrombosis (only very rarely by embolism) with the production as a rule of myocardial infarction. The thrombus is laid down in situ in the coronary artery, almost always in a very narrow lumen and superimposed on extensive atherosclerotic change in the wall of the artery. The exact mechanism of the production of coronary thrombosis is, however, still a mystery.

TREATMENT OF PREEPITHELIOMATOUS KERATOSES WITH ROENTGEN RAY

To the Editor:—What is the technic and dosage for treating the preepitheliomatous keratoses with x-rays in terms of milliamperes and time, as I do not have a roentgenometer? Is this method as satisfactory as radium treatment?

M.D., Kansas.

ANSWER.—Treatment of preepitheliomatous keratoses can be carried out as successfully with roentgen rays as with radium and in much less time.

The indirect measurement of the dosage is based on four factors—milliamperes, voltage, distance from the target and time. The term skin unit is understood to be the amount of irradiation necessary to produce erythema or epilation. Thus the dosage has been usually given, until rather recently, in terms of skin units. Years ago MacKee determined the factors involved and demonstrated how the factors could be varied to obtain the erythema dose. The following factors were the basis for computation of the dosage: 2 milliamperes, a spark gap of 6 inches or its equivalent in voltage, a distance of 8 inches from the target and an exposure of three minutes. The dosage for the keratoses depends on the thickness of lesion and whether or not it has become an epithelioma. If the lesion is thick, maceration with diluted solution of sodium hypochlorite and removal of the keratosis would permit of examination of its base to determine whether malignancy has developed. Unless one has had experience in the diagnosis and treatment of such lesions, undertreatment rather than overtreatment would be advisable. One skin unit to individual lesions and observation for at least a month before repetition would be safe.

Freezing the lesion with carbon dioxide snow or, if this is not available, with dry ice is also very effective. In skilled hands the use of the fulgurating spark is highly satisfactory.

EFFECTS OF COSMETICS ON SKIN

To the Editor:—Has any research work been done on face powder and rouge as regards its effect on the skin? A number of my patients have had trouble from cosmetics.

S. CHASE TUCKER, M.D., Peabody, Mass.

ANSWER.—Most of the investigative work on the effects of face powder and rouge on the skin has been done in the field of allergy. Certain powders, no matter how pure and mild in their effects on most skins, produce an untoward reaction in the person whose skin is susceptible to irritation from one or more ingredients in the powder. Certain ingredients are more or less allergenic. Among them may be mentioned metallic substances such as white lead, bismuth, mercury, a zinc compound; also aniline dyes and some perfumes. Heliotropin and orris root seem to be the more irritating of the perfume preparations. Powders containing starches, calcium carbonate, gypsum and barium sulfate may be irritating. Orris root was a great offender many years ago but is rarely used in modern powder manufacturing. Poucher reports zinc stearate and zinc oxide as irritating elements to the skin. Face powders should be free from gritty, sharp particles and all impurities. Rouges should contain no irritating dyes. Some women are sensitive to colors derived from eosin.

One of the most important elements in preventing irritation from face powders is the matter of thorough cleansing at bedtime. This is best done with a cleansing cream followed by soap and water. Leaving the powder in the pores without thorough cleansing is apt to produce inflammation or irritation which will not occur if the powder is removed properly.

INTERMENSTRUAL DISCHARGE

To the Editor:—A white woman, aged 29, until about nineteen months ago had a normal menstrual period occurring every twenty-eight days and lasting five or six days. Nineteen months ago she had an induced abortion with no complications. Since that time she has had a black discharge beginning several days before the regular menstrual period. This has increased until for the past four or five months it has begun exactly two weeks before the regular day of onset of the menstrual period, occurring on any straining and especially during coitus. This flow is not constant during the two weeks and is of small amount. The amount increases during coitus. There is no pain during this time but the patient is nervous and at times has a temperature around 99.8 F. The regular menstrual period still occurs every twenty-eight days but lasts only three or possibly four days. The flow is fairly normal during this time. The cervix is apparently normal. I would appreciate any suggestions you have to offer in this case.

M.D., Texas.

ANSWER.—It is possible, although not highly probable, that there may be a small placental mass in the uterus. Nearly always, however, when such tissue is present, there is more or less persistent bleeding and not periodic bleeding such as in this case. A more likely cause for the abnormal bleeding is the condition known as mittelschmerz, or intermenstrual pain. In typical instances of this kind, pain low down on one side of the abdomen occurs in the midperiod between flows. This pain may recur on the same or the opposite side. In some cases bleeding accompanies the pain and in other instances there is intermenstrual bleeding and no pain. The cause of the pain and the bleeding is ovulation. Usually no treatment need be instituted in these cases, especially because there is no satisfactory way to stop the pain or the bleeding. When the pain is severe, however, drugs must be prescribed. Since in this case the disturbance did not begin until an induced abortion was performed, because the flow lasts almost two weeks and because the patient has an elevated temperature during the time of the abnormal flow it is advisable to perform a curettement in the hope that a local cause may be found and removed. This should preferably be done when the patient does not have fever; namely, in the first half of the intermenstrual period.

CHROMIUM IN DRINKING WATER

To the Editor:—Recently one of our county health commissioners directed attention to a proprietary preparation which was being added to the water supply of a school for the purpose of preventing corrosion of piping. Examination of the product indicated that it was a solution of sodium silicate and a chromate. The laboratories reported the specific gravity to be 1.41, total solids 63.6 Gm. per hundred cubic centimeters, silica SiO_2 29 per cent by weight, chromium in terms of sodium chromate, Na_2CrO_4, 0.44 per cent by weight. The distributors of this product state that their prescribed dosage is 1 quart to 5,000 gallons of water. This is equivalent to 0.31 part per million of sodium chromate, Na_2CrO_4, or to 0.10 part per million of chromium, Cr. It is understood that it is added either to the cold water supply or to the hot water supply or to both. Information at hand indicates that several schools and certain commercial interests have been using the product and that its use may tend to extend. I have been unable to locate any reference as to the effect of drinking water containing small amounts of chromium and would greatly appreciate your opinion as to whether you would consider either the intermittent or the continued drinking of water containing chromium to the extent of 0.3 part per million of sodium chromate might have any harmful physiologic effect, and what limit should be set for the chromium content of drinking water.

WALTER H. HARTUNG, M.D., Columbus, Ohio.

ANSWER.—Chromate as here applied represents hexavalent chromium, but in the presence of water with any appreciable organic content and after a considerable interval of time, represented by hours, this hexavalent chromium may be changed over to a trivalent compound. Trivalent chromium is substantially nontoxic, but the hexavalent compounds are much more toxic. The presence of excess chlorine in a water supply tends to inhibit the chemical change mentioned. Moreover, since the query refers to a school water supply the implication is that the elapsed time between chromium water treatment and water use might be much less than is true for a large city. In the case of inhaled chromates, the upper limit of safety for extended exposures is somewhat arbitrarily fixed at 1 mg. of chromates to 10 cubic meters of air, the latter figure approximating the quantity of air breathed by an adult during a work day. Under

the circumstances mentioned it appears that if a gallon of water should be consumed daily, approximately 1 mg. of the chromate would be ingested. Probably this quantity would lead to no demonstrable physiologic abnormalities, but an unequivocal stand may not be taken.

At this time, compounds containing chromium are regarded as sensitizing agents. It is conceivable that chromium in small quantities might lead to dysfunction because of sensitization. It is more likely under other circumstances that workers sensitized through greater exposure connected with employment might respond through allergic manifestations to the minute traces mentioned, following ingestion or even in connection with bathing. It is the intent of this discussion not to condemn the practice mentioned in the query as wholly unwarranted but to point out the possibility of ill effects.

FATAL METHYL SALICYLATE POISONING

To the Editor:—A white girl, aged 15 months, was first seen half an hour after ingestion of approximately 1 ounce (30 cc.) of oil of wintergreen. The taking of the fluid was accidental, the wintergreen having been used to rub on arthritic joints of an older person in the household. According to the family the child had vomited twice and the vomiting was followed by one convulsion before I was called. When I arrived, the child had cyanosis of both hands and feet but the face and head were pink. The child was in a coma. Since its jaws were so spastic that they could not be opened enough to introduce a small stomach tube, the child was given one-fourth grain (0.016 Gm.) of codeine and was rushed to the hospital immediately. The jaws were then pried open by a mouth gag and a small stomach tube was introduced and the stomach lavaged with a solution of sodium bicarbonate. The child never regained consciousness but had two more convulsions and died. I have been unable to find reports of such cases in the literature. Is this poisoning of frequent occurrence? Since oil of wintergreen is commonly used should not this form of poisoning be given more attention in the medical literature?

W. L. SHARP, M.D., Anderson, Ind.

ANSWER.—The oil of wintergreen was probably methyl salicylate, which is prepared synthetically and is official in the United States Pharmacopeia with a dose of 0.75 cc.

While fatal poisoning with methyl salicylate is not frequent, cases have been reported in which death resulted from the ingestion of 30 cc. by an adult. Others report severe poisoning from 30 cc. but with ultimate recovery. The usual symptoms are severe abdominal pain, vomiting, convulsions, coma and suppression of the urine. More frequently the use of methyl salicylate as an internal therapeutic agent to replace the other salicylates has been followed by gastric distress with abdominal cramps and evidence of kidney irritation.

Since methyl salicylate has caused death in relatively small amounts, and even in therapeutic amounts may give rise to severe intoxication, its use should be restricted to external applications and its internal use discouraged.

DIMPLING OF FINGERS IN DEHYDRATION

To the Editor:—Is dimpling of the anterior surface of the finger tips as a sign that dehydration is becoming dangerous worth adding to the innumerable "signs"? I have had occasion to note this sign for some thirty-five years. I do not see it mentioned in French's book of differential diagnostic signs and symptoms.

H. B. AITKENS, M.D., Le Center, Minn.

ANSWER.—Dehydration is always potentially dangerous. The sign mentioned is seen only in severe and precarious dehydration. It would be most unwise to rely on and wait for such dimpling of the skin before taking measures to combat dehydration; there are many other earlier and readily observable phenomena giving warning of inadequate fluid retention.

GASTRIC FISTULA AFTER REPAIR OF PERFORATED ULCER

To the Editor:—In a case in which a large indurated and perforated gastric ulcer on the posterior wall of the lower third of the stomach is repaired without a gastro-enterostomy and a week later a gastric fistula develops, what are the chances of this closing without a secondary operation? What medical treatment would be indicated?

M.D., Minnesota.

ANSWER.—A fistula following closure of a perforated gastric ulcer will almost invariably heal without further operation. The only deterrents are an unrecognized carcinomatous ulcer and occasionally a high grade obstruction resulting either from the closure or from spasm. The medical treatment indicated naturally includes the control of gastric acidity. This can be done in several ways. A Levine tube may be introduced into the jejunum for feeding and nothing given by mouth for a number of days. This gives the stomach complete rest, and gastric secretion usually ceases during the starvation period. Another method is to put the patient on regular ulcer management, seeing that the acidity is completely controlled either with milk and cream or with milk and cream plus alkalis such as calcium carbonate, calcium phosphate or calcined magnesia. Erosion of the skin of the abdominal wall from the action of the stomach juices has frequently been bothersome, although not the serious problem encountered in duodenal fistulas. To overcome this erosion, a number of devices have recently been suggested, such as the local application of a liquid rubber solution, dusting the area with fullers' earth, or the use of proteins like beef broth.

DANGERS FROM ARSENIC IN PSORIASIS

To the Editor:—In a case of psoriasis involving the entire scalp and large areas on the body and extremities, under treatment with solution of potassium arsenite the psoriatic lesions disappeared almost completely, leaving but two or three small patches, not greater than a centimeter, on the body. Treatment was discontinued because of the toxic manifestations of the drug. The dermatitis reappeared in about four weeks and was cleared up again in about three weeks with the use of the same arsenical preparation. It has now been six or eight weeks since the dermatitis was cleared up for the second time and again it seems to be reappearing extensively. I should like to know whether it would be safe for me to resort to the same medication in the treatment of this condition and whether its long continued use would lead to severe, if not permanent, damage to the parenchyma of such organs as the liver and kidneys.

D. P. SCHULTZ, M.D., Port Jervis, N. Y.

ANSWER.—Long continued use of arsenic will lead to damage sooner or later, even if nothing more than pigmented areas on the skin and hyperkeratoses. A rest of at least six months should be given between courses of arsenic.

CONGENITAL SYPHILIS

To the Editor:—A premature infant, of seven months' gestation, weighing 3 pounds 4 ounces (1,475 Gm.), with a four plus cord Wassermann reaction, has survived nine days with no clinical symptoms of syphilis. His mother was not aware that she had syphilis. At a premarital check-up a year ago both parents had negative blood Wassermann reactions. How soon should this infant begin having antisyphilitic treatment? His present weight is 3 pounds 1 ounce (1,390 Gm.) and he is taking his feedings well by gavage. What drugs would be best in this case?

M.D., California.

ANSWER.—If the baby has congenital syphilis the mother has syphilis. The disease in the mother can usually be determined by a sensitive, properly done blood Wassermann or Kahn test. This should be done. If the baby has congenital syphilis, roentgenograms of the long bones will usually reveal pathognomonic evidences of the disease. A strongly positive cord Wassermann reaction probably means congenital syphilis in the large majority of instances. However, it seems to be generally agreed that antisyphilitic treatment should not be begun on such evidence alone. If the baby has congenital syphilis its blood will soon give a positive Wassermann or Kahn reaction. The test should be repeated certainly every two weeks until a positive reaction is obtained or until the baby is 4 months of age.

Treatment should be instituted as soon as the diagnosis is made. Sulfarsphenamine can be used, about 10 mg. per kilogram of body weight, and slowly increased to 20 mg. It is important not to use large doses of either arsenic or bismuth compounds at the start. Bismuth compounds should be used in appropriate doses and in courses alternating with the arsenic. What is probably more important than particular drugs or dosage is that the treatment be continuous.

ACRIFLAVINE IN LETHARGIC ENCEPHALITIS

To the Editor:—What is the opinion of the medical profession on acriflavine in lethargic encephalitis? The patient has been sick for fourteen months and little or no change has been noticed during the last six. Food and drugs are taken by mouth, and there seems to be no further loss of weight. Any suggestions will be appreciated.

M.D., Kentucky.

ANSWER.—Acriflavine is a dye which has been used in a few acute cases with alleged benefit. Little or no benefit has been reported in later cases. In the reliable reports by the Matheson commission (1932) one reads: "The recommendations for acriflavine are apparently based on opinions rather than results."

PNEUMOPERITONEUM IN PULMONARY TUBERCULOSIS

To the Editor:—Please tell me where to secure some detailed information on the technic of giving pneumoperitoneum in the treatment of pulmonary tuberculosis.

ROBERT A. STAFF, M.D., Richmond, Ind.

ANSWER.—The technic, indications and dangers of pneumoperitoneum have been discussed in the following articles:

Vadja, L.: *Ztschr. f. Tuberk.* **67**: 371, 1933.
Banyai, A. L.: *Am. Rev. Tuberc.* **29**: 603 (June) 1934.
Trimble, H. G., and Wardrip, B. H. *ibid.* **36**: 111 (July) 1937.
Fremmel, Frank, *ibid.* **36**: 488 (Oct.) 1937.

Medical Examinations and Licensure

COMING EXAMINATIONS

STATE AND TERRITORIAL BOARDS

Examinations of state and territorial boards were published in THE JOURNAL April 30, page 1513.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* Examinations will be held in all centers where there is a Class A medical school and five or more candidates who wish to write the examination, May 9-11 (limited to a few centers), June 20-22, and Sept. 12-14. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

SPECIAL BOARDS

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Oral examinations for Group A and B applicants* will be held at San Francisco, June 13-14. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Written examination* will be held at various centers of the United States and Canada, Oct. 17. *Final date for filing applications is Sept. 1.* Chairman, Dr. Walter L. Bierring, 406 Sixth Ave., Suite 1210, Des Moines, Iowa.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *General oral, clinical and pathological examinations for all candidates (Groups A and B)* will be conducted in San Francisco, June 13-14. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh (6).

AMERICAN BOARD OF OPHTHALMOLOGY: San Francisco, June 13; Washington, D. C., Oct. 8; Oklahoma City, Nov. 15. *All applications should be filed immediately and case reports, in duplicate, must be filed not later than sixty days before the date of examination.* Sec., Dr. John Green, 3720 Washington Blvd., St. Louis, Mo.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Chicago, June 10-11. Sec., Dr. Fremont A. Chandler, 6 N. Michigan Ave., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: San Francisco, June 10-11. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

AMERICAN BOARD OF PEDIATRICS: San Francisco, June 12; Detroit, October; Rochester, N. Y., November; and Oklahoma City, November 15. Sec., Dr. C. A. Aldrich, 723 Elm St., Winnetka, Ill.

AMERICAN BOARD OF PSYCHIATRY AND NEUROLOGY: San Francisco, June 11. Sec., Dr. Walter Freeman, 1028 Connecticut Ave. N.W., Washington, D. C.

AMERICAN BOARD OF RADIOLOGY: San Francisco, June 10-12. Sec., Dr. Byrl R. Kirklin, 102-110 Second Ave. S.W., Rochester, Minn.

AMERICAN BOARD OF SURGERY: Examination for candidates living along the northeastern and southeastern seaboards and western part of the United States, latter part of May. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia.

AMERICAN BOARD OF UROLOGY: San Francisco, June 11-13. Sec., Dr. Gilbert J. Thomas, 1009 Nicollet Ave., Minneapolis.

Wisconsin January Examination

Dr. Henry J. Gramling, secretary, Wisconsin State Board of Medical Examiners, reports the oral, written and practical examination held at Madison, Jan. 11-13, 1938. The examination covered 19 subjects and included 100 questions. An average of 75 per cent was required to pass. Fourteen candidates were examined, all of whom passed. Eleven applicants were licensed by reciprocity after an oral examination. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
Northwestern University Medical School	(1937) 87,	(1937)	*
School of Med. of the Division of the Biological Sciences		(1937)	84
University of Illinois College of Medicine		(1937)	84
University of Minnesota Medical School		(1937)	87
New York University College of Medicine		(1936)	86
University of Oregon Medical School		(1936)	83
Temple University School of Medicine		(1936)	85
Medical College of Virginia		(1936)	82
Marquette University School of Medicine		(1937)	*
University of Wisconsin Medical School		(1936) 78, 83,	83, 87

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Loyola University School of Medicine		(1934)	Illinois
Northwestern University Medical School		(1925)	Michigan
University of Illinois College of Medicine		(1930), (1934)	Illinois
Tufts College Medical School		(1915)	S. Dakota
University of Michigan Medical School		(1935)	Michigan
Washington University School of Medicine		(1934)	Missouri
University of Pennsylvania School of Medicine		(1932)	Penna.
Osteopaths†		Iowa, Ohio,	Oklahoma

* Average grade not reported.
† Licensed to practice osteopathy and surgery.

South Dakota January Report

The South Dakota State Board of Medical Examiners reports the written examination held at Pierre, Jan. 18-19, 1938. The examination covered 13 subjects and included 100 questions. An average of 75 per cent was required to pass. One candidate was examined and passed. One physician was licensed by reciprocity. The following schools were represented:

School	PASSED	Year Grad.	Per Cent
University of Minnesota Medical School		(1935)	90

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
University of Cincinnati College of Medicine		(1932)	Ohio

Book Notices

Genital Abnormalities, Hermaphroditism and Related Adrenal Diseases. By Hugh Hampton Young, M.A., M.D., Sc.D., Professor of Urology, the Johns Hopkins University, Baltimore. Cloth. Price, $10. Pp. 649, with 534 illustrations by William P. Didusch. Baltimore: Williams & Wilkins Company, 1937.

This volume marks an important milestone in medical literature. The interest of its content extends far beyond the realm of urologic and gynecologic surgery and impinges forcibly on the spheres of the internist, the psychiatrist and the pediatrician as well as on those of the urologist and the gynecologist. Nothing of its kind has appeared before and the book is destined to be a standard for many years. Dr. Young has had the rare opportunity of having access to a huge clinical material and has shown the same genius for pioneering in the correction of congenital abnormalities that he has demonstrated in his earlier publications.

The first seven and ninth chapters are devoted to a discussion of hermaphroditism and pseudohermaphroditism and occupy approximately 200 pages. The discussion is inclusive and takes up the subject from the classical period of Greek art to the most recent contributions on the embryology of the condition. The intersexes are described. Dr. Young has simplified for practical purposes the complex Latin terminology pertaining to pseudohermaphroditism and has adopted the following plan: "If the gonads are testes, the patient is called a male pseudohermaphrodite; if ovaries, a female pseudohermaphrodite." The detailed case reports of a series of pseudohermaphrodites and the beautifully illustrated operative technics for their surgical correction are shown in the clear drawings of Mr. Didusch. Almost every conceivable aberration from the normal has come under the observation of Dr. Young and he has made life bearable for many of these unfortunate persons by the remarkable reconstructive surgery illustrated.

The eighth chapter discusses the adrenogenital syndrome and its intimate relationship to pathologic changes in the adrenal cortex. Most of the cases have been observed in females. The operation for the simultaneous exposure and study of the adrenals is a distinct contribution to this branch of surgery, because up to the present all technics other than actual inspection of both adrenals have proved often unsatisfactory and occasionally deceptive.

The vaginal abnormalities in hermaphroditism and their correction are discussed in the ninth chapter. The plastic corrective surgery on the female genitalia as illustrated in this chapter again demonstrates the peculiar aptitude of the author for this highly specialized type of surgery. Masculinization due to ovarian tumors is next described and is illustrated by cases of arrhenoblastoma. The tenth chapter deals with the prostate gland in females. Its relation to hyperplasia of the adrenal cortex according to Young seems conclusively proved. Concomitant effects of adrenal cortical hyperplasia are noted, hypoplasia of the ovaries, failure of the vagina to descend normally, a continuation of the growth of the phallus and the continued growth of the prostatic ducts in the female to form a small but definite prostate as well as other signs of virilism. Hypergenitalism in boys and girls is next described at length, ascribed to various endocrinopathies. Hypogenitalism and gynecomastia are adequately discussed.

The next six chapters are devoted to the congenital abnormalities of the genito-urinary tract which the average surgeon is more frequently called on to correct; while of the same high standard as the preceding fifteen chapters, they are not as striking in their content, because of our greater familiarity with them. The concluding chapter, on the relation of the genital tract to the endocrine glands, is a complete summary of present knowledge concerning this fascinating complex, and ever changing subject.

As a whole, this volume is a well rounded work on the subjects discussed and should be read by every physician concerned with the aberrations in the physical and mental makeup of human beings.

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Differentialdiagnose in der inneren Medizin. Von Prof. Dr. med. O. Naegeli, Gew. Direktor der Medizinischen Universitätsklinik, Zürich. Lieferung 3. Paper. Price, 10.80 marks. Pp. 415-772, with 59 illustrations. Leipzig: Georg Thieme, 1937.

The third volume of Naegeli's differential diagnosis continues the high quality of condensed discussion observed in the previous two volumes (reviewed in THE JOURNAL July 11, 1936, and April 3, 1937). The present volume includes presentation of the problems of differential diagnosis in the febrile diseases, diseases of the bones and joints, diseases of the esophagus, diseases of the heart and blood vessels, diseases of the kidneys and urinary tract, diseases of the nervous system and, in a small section, endocrine disorders. It is curious that diseases of the esophagus are included in this volume; the second volume contained discussion of all other parts of the gastro-intestinal tract. The discussion of cardiac diseases is good although tremendously condensed. The discussion of the differential diagnosis of the nephritides is the poorest section of this volume. Here as in the previous volumes one gains the impression that the patient is considered as a loosely correlated collection of systems rather than as a finely equilibrated whole. The printing and paper are good but the binding is atrocious; before three pages had been read the paper binding split and pages began to fall out. Cheaper binding and printing of medical works, so that frequent revisions can be made without too much expense to the readers, are highly desirable, but there are limits which should not be passed. A book should at least stand the handling of one reading. This series of volumes can be recommended as reference work revealing the modern German thought and methods in diagnosis.

Demonstrations of Physical Signs in Clinical Surgery. By Hamilton Bailey, F.R.C.S., Surgeon, Royal Northern Hospital, London. Sixth edition. Cloth. Price, $6.50. Pp. 284, with 358 illustrations. Baltimore: William Wood & Company, 1937.

The appearance of the sixth edition of this work within ten years is indicative of its popularity and usefulness. As its name suggests, it is not a textbook of surgical diagnosis. It deals essentially with various clinical signs in surgery, how they can be elicited and their significance in establishing a diagnosis. The book is profusely illustrated with clearly reproduced photographs, diagrams and colored plates which greatly enhance the descriptions and teaching value of the text. This volume, written in the usual clear, simple style of the author, can be easily used and understood, even by the beginner.

Le système nerveux végétatif. Par J. Tinel. Paper. Price, 160 francs. Pp. 847, with 306 illustrations. Paris: Masson & Cie, 1937.

The first part of this book deals largely with structure. In his description of the anatomy the author places great emphasis on the autonomous interstitial plexuses and cells of the viscera. His discussion of the sympathetic and parasympathetic systems follows accepted lines. The histology of the vegetative system is described in some detail with beautiful illustrations. Many of the photographs, however, seem to have been extensively retouched. Chapter 2 contains a useful summary of recent work on hormonal and pharmacologic substances activating or paralyzing the vegetative nervous system. In chapters 3 and 4 the sympathetic and parasympathetic systems are described in detail and the functions of their various fibers discussed. The second part of the book deals with the vegetative functions—pilomotor, secretory, vasomotor, sensory and trophic—and ends with a discussion of the superior vegetative centers and their influence on the regulation of heat, sleep, psychic functions and the metabolism of water and fat. The description of the pilomotor system follows the classic researches of André Thomas. The author accepts the general view at the present time that the sympathetic system exercises no direct action on the tonus or contraction of striated muscle. The recent researches of Fulton and his associates on the cortical representation of the vegetative system are not mentioned. The third part of the book discusses the clinical syndromes resulting from lesions at various points of the vegetative nervous system both central and peripheral. In the section on sympathetic reflex pain a great number of clinical histories are introduced and it would make an interesting appendix to the recent volume of Leriche on the surgery of pain. The author warns that any attempt to suppress by surgical means a pain of sympathetic origin must radically and at once remove the causal local irritation or the trouble will be made much worse. His discussion of surgical intervention contains but little with regard to technic, being concerned mainly with principles. The book ends with a discussion of medical and physical therapy. The personal touch is most evident in the sections dealing with the reflex vasomotor and painful syndromes. The rest is mainly a compilation from the literature, albeit a useful one, especially for its summary of French work often difficult to obtain.

Operative Surgery. By J. Shelton Horsley, M.D., LL.D., F.A.C.S., Attending Surgeon, St. Elizabeth's Hospital, Richmond, Va., and Isaac A. Bigger, M.D., Professor of Surgery, Medical College of Virginia, Richmond, Va. With contributions by C. C. Coleman, M.D., F.A.C.S., Professor of Neurological Surgery, Medical College of Virginia, John S. Horsley, Jr., M.D., Assistant Professor of Surgery, Medical College of Virginia, Austin I. Dodson, M.D., F.A.C.S., Professor of Urology, Medical College of Virginia, and Donald M. Faulkner, M.D., Associate Orthopedist, Medical College of Virginia. Volumes I and II. Fourth edition. Cloth. Price, $15, per set. Pp. 674; 675-1387, with 1,259 illustrations by Miss Helen Lorraine. St. Louis: C. V. Mosby Company, 1937.

This is one of the most salutary and serviceable contributions to the literature on operative surgery that has appeared since "The Text Book on Operative Surgery" by Theodore Kocher in 1911. Whether or not one agrees with the various hypotheses suggested throughout the text as a means of explaining some of the more obscure and recondite biologic reactions following many different surgical procedures, one cannot but admire and regard with the deepest interest the constant repetition of the suggestion and thought that the art of operating, combined with a thorough knowledge of anatomy, while essential, must never blind the surgeon to or allow him to be unmindful of the correct physiologic principles involved and the consequent biologic effects of a surgical operation. The student of surgery is importuned constantly to recall that "real progress in surgery lies not so much in cultivating the art of surgery and in striving after mechanical dexterity, which is important but can be acquired in a few years, as in the study of biological principles that concern function, nutrition, metabolism and repair of tissue and in the thoughtful application of these principles to every operation and to every method of surgical treatment." This plea to the student to regard surgery in this broader aspect is stimulating and immediately distinguishes this treatise from other operative surgeries which, while perhaps more inclusive, have been mere technical encyclopedias. The large personal experience of Dr. Horsley senior and his distinguished collaborators has been related in an attractive and readable manner. The format of the books is excellent. It might be said without exaggeration that this is the only operative surgery published in recent years in which there has been any evidence whatever of the student in it. A sense of selective appraisal pervades the entire text, the authors making no attempt to be inclusive. The surgical policy and philosophy based on the large clinical and experimental knowledge of this distinguished group of surgeons from one of the more prominent medical centers has been annotated. It is not only a pleasure to read but a real help on "the night before" when sitting in one's study planning an operation for the following morning. The simple concise description of technical procedures experienced by the authors, together with their opinions and their suggestions as to the relative merits of special operations described by others, reveals pertinent thought and mature judgment. There has been no "stuffing" of the text for the sake of forming an impressive but, as a rule, totally useless cumbersome index and bibliography. At the conclusion of each chapter a succinct relevant bibliography is given that provides a ready index to a more detailed literature pertaining to any one subject. It is of course obvious that accessibility and brevity must run hand in hand in any textbook on surgery when one considers the great volume of literature that must be digested and that cannot be presented in detail. The illustrations are excellent and remarkably clear. In some instances where they have been redrawn from the original papers, the copies are clearer and more descriptive than the original drawings. Every operating surgeon and medical student, as well as those in surgical research, should have these volumes right at hand on their book shelves.

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Die Irradiation autonomer Reflexe. Untersuchungen zur Funktion des autonomen Nervensystems. By Dr. Alfred Schweitzer, Assistant in Department of Physiology, Middlesex Hospital Medical School, University of London. Paper. Price, 40 Swiss francs. Pp. 376, with 38 illustrations. Basel: S. Karger, 1937.

This textbook on the autonomic nervous system is modern, complete and critically written. The subject matter is described clearly. After two chapters on introduction and classification of the subject matter, the book is divided into three large chapters. The first deals with a general discussion of the conception of nervous irradiation, autonomic reflexes, anatomic groundwork and irradiation of the autonomic reflexes, followed by a summary and conclusions. The second chapter deals with a special discussion of the skin and sensory nerves, eye and eyeball, the ear, the respiratory apparatus, the digestive system, the urogenital structures and finally the blood vascular system. The last chapter discusses the biologic significance of the autonomic reflexes. There is an unusually good bibliography occupying about forty printed pages. It includes all the investigators in the field of the autonomic nervous system. There is a general index and an index of authors.

Primary Carcinoma of the Lung. By Edwin J. Simons, M.D., Member of the Staff, St. Gabriel's Hospital, Little Falls, Minnesota. Cloth. Price, $5. Pp. 263, with 31 illustrations. Chicago: Year Book Publishers, Inc., 1937.

This is a good review of the present knowledge of carcinoma of the lung. The writer has assembled the more important publications on the subject and added a few cases of his own. The author devotes thirty pages to the incidence of primary carcinoma of the lung, with the conclusion that the disease has increased both absolutely and relatively. The etiology of cancer of the lung is discussed in forty pages. The majority of workers have found no single etiologic agent but numerous forms of chronic irritation which cause epithelial metaplasia and malignant conditions. There are thirty pages on pathology. The histologic types are divided into (1) adenocarcinoma, (2) squamous cell, and (3) undifferentiated round and spindle cell, in accordance with the important contribution of Arkin and Wagner in THE JOURNAL, Feb. 22, 1936. The table of these two authors is reproduced, giving the histologic type and site of metastases in seventy-four cases examined post mortem. The clinical considerations cover seventy pages. Sex, age incidence, clinical classification, symptoms, physical appearances and laboratory data are summarized. The value of the x-rays and bronchoscope are emphasized. The dictum of Arkin and Wagner that "a peculiarly characteristic history of pulmonary well-being to within an average of eight months before seeking medical aid, the development of bronchitis or recurrent attacks of pneumonia or pleurisy, persistent cough, pulmonary or extrapulmonary pain, hemoptysis and dyspnea should enable the physician to suspect pulmonary cancer" is reaffirmed by the author's review of the literature. The subject of therapy is discussed with special reference to surgical removal in early cases. The book closes with a bibliography of twenty pages. This book should convince those physicians who are still skeptical about the frequency of primary pulmonary cancer that the disease constitutes about 7 per cent of all primary malignant growths. The only hope of cure is surgical removal in early cases before metastases have spread to other organs.

The Practitioners Library of Medicine and Surgery. Volume XIII: Supplement—Index. Supervising Editor: George Blumer, M.A., M.D., David P. Smith Clinical Professor of Medicine, Yale University School of Medicine. Cloth. Price, $10. Pp. 1,161, with illustrations. New York & London: D. Appleton-Century Company, Incorporated, 1938.

This volume completes the extensive work which has been engaging Dr. George Blumer and his associates for some years. In this supplementary volume a variety of subjects are concerned, the main headings having to do with endocrinology, medical technic, infectious diseases, diseases of metabolism, of the gastrointestinal tract, of the lungs and of the heart, obscure diseases, therapeutics, anesthesia, genito-urinary system, and the psychologic aspects of pediatric practice. Presumably some of these essays arrived too late to be included in the volumes into which they might have fitted better. It is useful, however, to have all of them available, for the system would have suffered by their absence. This volume also contains the complete index, which occupies about 350 pages.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Health Insurance: "Disease of Organs Which Are Not Common to Both Sexes" Construed.—The defendant insurance company insured the plaintiff against loss of time on account of disease, with the proviso that the policy was not to cover death or disability from any "disease of organs which are not common to both sexes." The insured contracted gonorrhea that resulted in a prostatic abscess and bilateral epididymitis. The company refused to pay the benefits provided in the policy, and the plaintiff sued and obtained judgment in the trial court. The defendant then appealed to the Supreme Court of Nebraska.

A health and accident insurance company, said the court, may limit its liability in any reasonable manner and it may therefore exclude liability for diseases of organs not common to both sexes. Such an exemption, in the opinion of the court, would create an impression on a male layman that it was intended to exempt gonorrhea from the coverage of the policy, although it did not specify that disease. Such an insured would naturally consider that any disease which would afflict him through his penis and its adjuncts would be exempt under the policy because the same disease would begin its course in a female through her genital organs, which he would well understand were not "common" with his, though they have some of the functions similar or complementary to his. The general understanding of the lay mind, the court thought, is that the male and female genital organs are "not common to both sexes." That both sexes have a urethra, both have a bladder and both have a blood stream, all of which may be ultimately affected, does not make the organs of the plaintiff, which were primarily affected by the gonococci, and the genital organs of a female "common to both sexes." The Supreme Court, therefore, reversed the judgment of the trial court for the plaintiff and directed that court to enter a judgment for the defendant.—*Hamilton v. Mutual Ben. Health & Accident Assn. (Neb.), 275 N. W. 863.*

Workmen's Compensation Acts: Detachment of Retina Attributed to Trauma.—Attributing the detachment of the retina of his left eye to a blow received during the course of his employment, the plaintiff instituted proceedings under the workmen's compensation act of Nebraska. The trial court awarded compensation and the defendant employer appealed to the Supreme Court of Nebraska.

In May 1933 the plaintiff while working on a farm was injured by a piece of steel entering his left eye. Attempts made by a physician to remove the steel splinter were unsuccessful. The removal of the eye was recommended but the plaintiff refused to submit to the operation. Apparently the eye improved and the plaintiff subsequently began work for the defendant. According to the plaintiff's testimony, on Sept. 2, 1935, while in the performance of his work, he bumped his head on a piece of pipe. Five days later he went to a hospital for an operation on his left eye. The attending physician diagnosed the trouble as a retinal detachment which the plaintiff contended was due to the blow he had received September 2.

The physician who attempted to remove the steel splinter in 1933 testified that he had at that time recommended the removal of the eye for the reason that complications were bound to come sooner or later which would seriously damage the uninjured eye. He also testified that the steel splinter was the cause of the detached retina and that the alleged trauma to the head was merely coincidental with the development of the condition resulting in the detachment of the retina. He further testified that the steel splinter was reduced in size during the two years it was embedded in the eye and that this breakdown of the foreign body would produce a low-grade inflammatory reaction in the retina which would ultimately cause a detach-

ment of it. Another physician, however, testified to the effect that the steel splinter would cause the plaintiff no harm after it became encysted, in the absence of trauma. He testified, further, that the plaintiff suffered from sinus infection in August 1935 that required a drainage of the sinuses by operative surgery. After the operation the sinuses cleared up, but the plaintiff's left eye was inflamed to such an extent that medical treatment was continued. This condition existed prior to the date of the alleged accident and continued until it was diagnosed on Sept. 4, 1935, as retinal detachment. The plaintiff offered in evidence quotations from medical books citing instances in which steel and copper foreign bodies had remained in the eye for many years and even for a lifetime. An examination of these authorities, however, convinced the court that they were cited as rare exceptions to the general rule that an eye containing a steel or copper splinter generally breaks down as a result thereof in a much less period of time.

For the plaintiff to be entitled to compensation, the court said, he must prove by preponderance of the evidence that he suffered an accident arising out of and in the course of his employment which resulted in the injuries for which he claims an award. This, the court said, the plaintiff failed to do. The only proof in the record that he suffered injury while in the employ of the defendant was the evidence he himself gave. His testimony that he was injured while working was impeached by the testimony of three other witnesses. The evidence, the court continued, indicated that the plaintiff had prior to the date of the alleged accident an inflammation of the left eye after the sinus infection had been relieved which continued until the trouble was diagnosed as a detachment of the retina. The fact that only the left eye was inflamed during this period was indicative of the commencement of the deterioration of the eye before the alleged accident occurred. That inflammation of an eye containing a steel particle is a sign of an impending retinal detachment seemed to the court to be sustained by the testimony and by the medical authorities cited.

Finding that the plaintiff had failed to prove by a preponderance of evidence that he suffered an injury arising out of and in the course of his employment, the judgment of the trial court granting compensation was reversed and the action dismissed.—*Lochr v. Alamito Dairy Co. (Neb.), 275 N. W. 596.*

Telephone: Liability for Failure to List Physician in Classified Section.—The plaintiff, a physician, subscribed for a business telephone and the telephone company entered into a contract with him to list his name in both the regular and classified business sections of the telephone directory. The company contracted with the defendant publishers for the editing and publication of the telephone directory. The plaintiff's name did not appear in the classified section, he sued the telephone company and the publishers, and the jury returned a verdict for $3,000 for the plaintiff. The defendants filed separate motions for new trials and motions for judgment notwithstanding the verdict. The motions for a new trial were sustained but the motions for judgment notwithstanding the verdict were overruled. The defendants then appealed to the court of appeals of Ohio, Hamilton County.

There was clearly a contract between the plaintiff and the telephone company, the court said, for the listing of his name in the classified section. For a failure so to list, the plaintiff had a cause of action unless there were some circumstances which would excuse performance by the telephone company. The company argued that it complied with all legal requirements by listing the physician in the white section of the directory. But, the court said, while the rules and regulations of the Public Utilities Commission required the listing only in the white section, this was the minimum requirement and did not in any way limit or prohibit the subscriber from making arrangements for the betterment of his service. There was nothing in such rules and regulations to prohibit or make illegal the carrying of names and numbers in the classified business section. Furthermore, continued the court, the contract between the telephone company and the publishers was one by which the latter undertook to perform a duty the telephone company owed the plaintiff. The plaintiff, therefore, was a creditor beneficiary of that contract and as such could maintain an action against the publishers. The trial court did not err, said the appellate court, in overruling the motions for judgment notwithstanding the verdict for the plaintiff.—*Vail v. Reuben H. Donnelley Corporation (Ohio), 10 N. E. (2d) 239.*

Society Proceedings

COMING MEETINGS

American Medical Association, San Francisco, June 13-17. Dr. Olin West, 535 North Dearborn St., Chicago, Secretary.

American Academy of Pediatrics, Del Monte, Calif., June 9-11. Dr. Clifford G. Grulee, 636 Church St., Evanston, Ill., Secretary.

American Academy of Tuberculosis Physicians, San Francisco, June 17-18. Dr. Arnold Minnig, 638 Metropolitan Bldg., Denver, Secretary.

American Association of Industrial Physicians and Surgeons, Chicago, June 6-9. Dr. Volney S. Cheney, Armour and Company, Union Stock Yards, Chicago, Secretary.

American Association of Medical Milk Commissions, San Francisco, June 13-14. Dr. Paul B. Cassidy, 2037 Pine St., Philadelphia, Secretary.

American Dermatological Association, Del Monte, Calif., June 9-11. Dr. Fred D. Weidman, 36 Hamilton Walk, Philadelphia, Secretary.

American Gynecological Society, Asheville, N. C., May 30-June 1. Dr. Richard W. TeLinde, 11 East Chase St., Baltimore, Secretary.

American Heart Association, San Francisco, June 10-11. Dr. Howard B. Sprague, 50 West 50th St., New York, Secretary.

American Medical Women's Association, San Francisco, June 12-14. Dr. Irma A. Cary, 1630 N.E. Halsey St., Portland, Ore., Secretary.

American Ophthalmological Society, San Francisco, June 9-11. Dr. Eugene M. Blake, 303 Whitney Ave., New Haven, Conn., Secretary.

American Pediatric Society, Bolton Landing, N. Y., June 9-11. Dr. Hugh McCulloch, 325 North Euclid Ave., St. Louis, Secretary.

American Proctologic Society, San Francisco, June 11-13. Dr. Curtice Rosser, 710 Medical Arts Bldg., Dallas, Texas, Secretary.

American Psychiatric Association, San Francisco, June 6-10. Dr. W. C. Sandy, State Education Bldg., Harrisburg, Pa., Secretary.

American Radium Society, San Francisco, June 13-14. Dr. F. W. O'Brien, 465 Beacon St., Boston, Secretary.

American Rheumatism Association, San Francisco, June 13. Dr. Loring T. Swaim, 372 Marlborough St., Boston, Secretary.

American Society of Clinical Pathologists, San Francisco, June 9-11. Dr. A. S. Giordano, 531 North Main St., South Bend, Ind., Secretary.

American Urological Association, Quebec, Canada, June 27-30. Dr. Clyde L. Deming, 789 Howard Ave., New Haven, Conn., Secretary.

Association for the Study of Allergy, San Francisco, June 9-10. Dr. J. Harvey Black, 1405 Medical Arts Bldg., Dallas, Texas, Secretary.

Association for the Study of Internal Secretions, San Francisco, June 13-14. Dr. E. Kost Shelton, 921 Westwood Blvd., Los Angeles, Secretary.

California Medical Association, Pasadena, May 9-12. Dr. F. C. Warnshuis, 450 Sutter Street, San Francisco, Secretary.

Connecticut State Medical Society, Groton, June 1-2. Dr. Creighton Barker, 258 Church St., New Haven, Secretary.

Florida Medical Association, Miami, May 9-11. Dr. Shaler Richardson, 111 W. Adams St., Jacksonville, Secretary.

Hawaii Territorial Medical Association, Honolulu, May 20-22. Dr. Douglas B. Bell, Dillingham Bldg., Honolulu, Secretary.

Illinois State Medical Society, Springfield, May 17-19. Dr. Harold M. Camp, Lahl Bldg., Monmouth, Secretary.

Iowa State Medical Society, Des Moines, May 11-13. Dr. Robert L. Parker, 3510 Sixth Ave., Des Moines, Secretary.

Kansas Medical Society, Wichita, May 9-12. Mr. C. G. Munns, 112 West Sixth St., Topeka, Executive Secretary.

Maine Medical Association, Bar Harbor, June 26-28. Dr. F. R. Carter, 22 Arsenal St., Portland, Secretary.

Massachusetts Medical Society, Boston, May 31-June 2. Dr. Alexander S. Begg, 8 The Fenway, Boston, Secretary.

Medical Library Association, Boston, June 28-30. Miss Janet Doe, 2 East 103d St., New York, Secretary.

Minnesota State Medical Association, Duluth, June 29-July 1. Dr. E. A. Meyerding, 11 West Summit Ave., St. Paul, Secretary.

National Tuberculosis Association, Los Angeles, June 20-23. Dr. Charles J. Hatfield, 7th and Lombard Sts., Philadelphia, Secretary.

New Hampshire Medical Society, Manchester, May 17-18. Dr. Carleton R. Metcalf, 5 South State St., Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, May 17-19. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.

New Mexico Medical Society, Santa Fe, June 6-8. Dr. L. B. Cohenour, 219 West Central Ave., Albuquerque, Secretary.

New York, Medical Society of the State of, New York, May 9-12. Dr. Peter Irving, 2 East 103d St., New York, Secretary.

North Dakota State Medical Association, Bismarck, May 16-18. Dr. Albert W. Skelsey, 20½ North Broadway, Fargo, Secretary.

Ohio State Medical Association, Columbus, May 11-12. Mr. C. S. Nelson, 79 East State St., Columbus, Executive Secretary.

Oklahoma State Medical Association, Muskogee, May 9-11. Dr. L. S. Willour, Third and Seminole, McAlester, Secretary.

Rhode Island Medical Society, Providence, June 1-2. Dr. Guy W. Wells, 124 Waterman St., Providence, Secretary.

Society of Surgeons of New Jersey, Hackensack, May 25. Dr. Walter B. Mount, 21 Plymouth St., Montclair, Secretary.

South Carolina Medical Association, Myrtle Beach, May 17-19. Dr. E. A. Hines, Seneca, Secretary.

South Dakota State Medical Association, Huron, May 9-11. Dr. Clarence E. Sherwood, 102½ Egan Ave. S., Madison, Secretary.

Texas, State Medical Association of, Galveston, May 9-12. Dr. Holman Taylor, 1404 West El Paso St., Fort Worth, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers in continental United States and Canada for a period of three days. Periodicals are available from 1927 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Cancer, New York

32: 163-338 (Feb.) 1938

Glioneuroma and Spongioneuroblastoma, Forms of Primary Neuro-Ectodermal Tumors of the Brain. J. H. Globus, New York.—p. 163.

Spheno-Occipital Chordoma. J. H. Peers, Boston.—p. 221.

Effect of Oil of Wintergreen on Spontaneous Tumors of Mammary Gland in Mice: VI. Different Effect of Two Fractions Obtained by Distillation of True Oil. L. C. Strong, New Haven, Conn.—p. 227.

Bio-Electric Properties of Cancer-Resistant and Cancer-Susceptible Mice. H. S. Burr, G. M. Smith and L. C. Strong, New Haven, Conn.—p. 240.

Effect of Human and Animal Urine and of Serums on Ovaries of Animals. A. Strickler, Philadelphia.—p. 249.

Proliferative Changes Taking Place in Epithelium of Vagina and Cervix of Mice with Advancing Age and Under Influence of Experimentally Administered Estrogenic Hormones. V. Suntzeff, E. L. Burns, Marian Moskop and L. Loeb, St. Louis.—p. 256.

American Journal of Hygiene, Baltimore

27: 1-220 (Jan.) 1938

Passive Sensitization of Guinea Pigs to Specific Carbohydrate with Globulins of Type III Antipneumococcus Horse Serum as Influenced by Environmental Temperature and Feeding Thyroid Gland. G. H. Bailey and S. Raffel, Baltimore.—p. 1.

Results Obtained in Cooperative Investigation of Bacteriologic Mediums for Milk Counts. J. H. Brown, Baltimore; C. W. Bonynge, Los Angeles, and H. Moak, Brooklyn.—p. 12.

Liver Lesions Caused by Chlorinated Naphthalene. F. B. Flinn and N. E. Jarvik, New York.—p. 19.

Cellular Response in Acquired Resistance in Guinea Pigs to Infection with Pig Ascaris. K. B. Kerr, Baltimore.—p. 28.

Attempts to Induce an Artificial Immunity Against the Dog Hookworm, Ancylostoma Caninum, and the Pig Ascaris, Ascaris Lumbricoides Suum. K. B. Kerr, Baltimore.—p. 52.

Studies on Passive Transference of Acquired Resistance to Dog Hookworm and Pig Ascaris. K. B. Kerr, Baltimore.—p. 60.

Occurrence and Succession of Coliform Organisms in Human Feces. L. W. Parr, Washington, D. C.—p. 67.

Incidence of Mixed Infections with Intestinal Protozoa. D. C. Boughton and E. E. Byrd, Athens, Ga.—p. 88.

Eggs of Nyssorhynchus Group of Anopheles (Culicidae) in Panama. L. E. Rozeboom, Panama, Republic of Panama.—p. 95.

Comparison of Effectiveness of Subcutaneous and Intravenous Injections of Tetanus Toxin. J. R. Dawson Jr., New York.—p. 108.

Serologic Relationship of Some Helminths. L. L. Eisenbrandt, New Brunswick, N. J.—p. 117.

*Prevalence of Trichinosis. C. H. Scheifley, Minneapolis.—p. 142.

Self Limitation and Resistance in Trichomonas Fetus Infection in Cattle. J. Andrews, Baltimore.—p. 149.

Regularity of Egg Output of Helminth Infestations, with Especial Reference to Schistosoma Mansoni. J. A. Scott, Baltimore.—p. 155.

Studies in Egypt on Correction of Helminth Egg Count Data for Size and Consistency of Stools. J. A. Scott and W. H. Headlee, Baltimore.—p. 176.

Reciprocal Immunity in Avian Malarias. R. D. Manwell, Syracuse, N. Y.—p. 196.

Toxoplasma-like Parasites in Canaries Infected with Plasmodium. R. Hegner and Fruma Wolfson, Baltimore.—p. 212.

Prevalence of Trichinosis.—From 2,597 cadaver examinations summarized from the literature since 1901 an incidence of trichina infestation of 12.3 per cent is derived. Scheifley discusses a survey of 118 cadavers from Minneapolis and St. Paul Charity hospitals, of which 12.7 per cent were found to harbor the trichinae. This is combined with a previous report on 117 cadavers from the dissecting room from Minneapolis giving 235 cases with an incidence of 14.4 per cent. Evidence is presented which indicates that the incidence of trichinosis among the adults of the United States is about 20 per cent.

American Journal of Medical Sciences, Philadelphia

195: 281-428 (March) 1938

Influence of Mucin on Absorption of Iron in Hypochromic Anemia. C. W. Heath, G. R. Minot, F. J. Pohle and G. Alsted, Boston.—p. 281.

*Clinical Observations on Whipple Liver Fraction (Secondary Anemia Fraction). W. H. Barker and D. K. Miller, New York.—p. 287.

*Pulmonary Involvement in Lymphosarcoma and Lymphatic Leukemia. E. H. Falconer and M. E. Leonard, San Francisco.—p. 294.

Electrocardiographic Changes and Peripheral Nerve Palsies in Toxic Diphtheria. E. A. Burkhardt, C. Eggleston and L. W. Smith, New York.—p. 301.

Effects of Carotenemia on Function of Thyroid and Liver. H. H. Anderson and M. H. Soley, San Francisco.—p. 313.

Blood Sugar During Labor, at Delivery and Post Partum, with Observations on the Newborn. Rose C. Ketteringham and B. R. Austin, Cleveland.—p. 318.

Blood and Urine of Dogs Following Paraldehyde. J. H. Defandorf, Washington, D. C.—p. 329.

Observations on Two Different Pressor Substances Obtained from Extracts of Renal Tissue. J. R. Williams Jr., T. R. Harrison and M. F. Mason, Nashville, Tenn.—p. 339.

Marihuana: Our New Addiction. N. S. Yawger, Philadelphia.—p. 351.

Sterility of Alcohol. L. Gershenfeld, Philadelphia.—p. 358.

Negative Results of Rhus Antigen Treatment of Experimental Ivy Poisoning. L. M. Sompayrac, Jacksonville, Fla.—p. 361.

Urinary Output of Vitamin C in Active Tuberculosis in Children. W. W. Jetter and T. S. Bumbalo, Buffalo.—p. 362.

Further Note on Carcinoma of the Breast in One of Homologous Twin Sisters. I. I. Kaplan, New York.—p. 366.

Clinical Observations on Use of Liver Fraction.—Barker and Miller administered orally the secondary anemia liver fraction of Whipple and his co-workers to eleven patients with chronic hypochromic microcytic anemia. During the control period eight patients showed at least a slight reticulocyte response to 70 mg. of iron a day, which responses varied from 1.2 to 7 per cent and occurred between the fourth and the tenth day after the initial dose of iron. Following the peak, the reticulocyte curve declined or flattened out until 25 Gm. of liver extract daily was substituted for the inorganic iron preparation in the second observation period. Then each of the eleven patients gave a secondary reticulocyte response to this liver fraction, the peak of the rise ranging from 3 to 15.8 per cent. A moderate rise in levels of erythrocytes and hemoglobin occurred during these first two periods of therapy; however, the rate of improvement in blood levels was much more rapid in the third period when the patients were receiving large doses of inorganic iron. Of the seven cases in which reticulocytes were followed throughout the third period, tertiary reticulocyte rises which equaled or excelled the primary and secondary responses developed in five. It appears likely that the liver fraction contains reticulocytogenic material apart from its iron content.

Pulmonary Involvement in Lymphosarcoma and Lymphatic Leukemia.—Falconer and Leonard attempt to correlate the clinical, pathologic and x-ray observations showing pulmonary involvement. The figures for pulmonary incidence were lymphatic leukemia 30 per cent and lymphosarcoma 36 per cent. Previous observations in Hodgkin's disease showed 31 per cent. Interest is enhanced if one considers Hodgkin's disease an infection and the former two diseases neoplastic in nature. From the clinical, x-ray and pathologic aspects the authors' studies with reference to pulmonary involvement in the three groups of diseases show a striking similarity. In the cases of Hodgkin's disease, the time between onset and appearance of pulmonary symptoms varied from onset with pulmonary symptoms to eight years. In two patients pulmonary symptoms were primary. In five patients the time varied from two months to eight years. The length of life after onset of pulmonary involvement varied from twenty-two to fifty-one months. These figures, when compared with the corresponding figures for lymphatic leukemia and lymphosarcoma, show that the cases of Hodgkin's disease apparently ran a more slowly progressive and chronic course. In the lymphatic leukemia group the duration of life was from two months to eleven years, eight patients living less than four years after onset of symptoms. In the lymphosarcoma series the figures for duration of life are from four months to four and one-half years, eight patients living less than four years after onset of symptoms. Pulmonary involvement in the majority of cases in both series tended to occur when the disease became widespread in the body. Once the parenchyma of

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the lung becomes involved or pleural effusion supervenes, the outlook is poor. Patients with either disease vary greatly in their sensitivity to radiation, and for this reason it should always be used to the full limits of its possibilities.

American Journal of Physiology, Baltimore

121: 311-564 (Feb.) 1938. Partial Index

Hydrogen Ion Concentration Changes in Rabbit and Human Striated Muscle After Contraction. G. L. Maison, O. S. Orth and K. E. Lemmer, Madison, Wis.—p. 311.

Response of Plasma Potassium Level in Man to Administration of Epinephrine. A. Keys, Rochester, Minn.—p. 325.

Immature Rat Uterus as an Assay Endpoint for Gonadotropic Substances. C. G. Heller, H. Lauson and E. L. Sevringhaus, Madison, Wis.—p. 364.

Changes in Water of Tissues Induced by Diets Containing Various Mineral Supplements. E. S. Eppright and A. H. Smith, New Haven, Conn.—p. 379.

Response of Single Optic Nerve Fibers of Vertebrate Eye to Illumination of Retina. H. K. Hartline, Philadelphia.—p. 400.

*Nature of Magnesium Tetany. D. M. Greenberg and Elma V. Tufts, Berkeley, Calif.—p. 416.

Effect of Magnesium Deprivation on Renal Function. D. M. Greenberg, S. P. Lucia and Elma V. Tufts, Berkeley, Calif.—p. 424.

Theory of Retinocerebral Function with Formulas for Threshold Vision and Light and Dark Adaptation at the Fovea. C. A. Elsberg and H. Spotnitz, assisted by Jane Stewart, New York.—p. 454.

Relationship of Calcium Ion Concentration to Coagulation of Citrated Plasma. J. C. Ransmeier and F. C. McLean, Chicago.—p. 488.

Effect of Body Temperature on Reaction Time. N. Kleitman, S. Titelbaum and P. Feiveson, Chicago.—p. 495.

Changes with Age in Basal Metabolic Rate in Adult Men. W. H. Lewis Jr., New York.—p. 502.

Changes with Age in Cardiac Output in Adult Men. W. H. Lewis Jr., New York.—p. 517.

Rate of Disappearance of Intravenously Administered Dextrose in Human Subject. M. Pijoan and J. G. Gibson 2d, Boston.—p. 534.

Effect of Adrenal Cortical Extract on Oxygen Consumption of Normal Human Beings. F. A. Hitchcock, R. C. Grubbs and F. A. Hartman, Columbus, Ohio.—p. 542.

Effects of Adrenal Cortical Extract in Rest and Work. V. Missiuro, D. B. Dill and H. T. Edwards, Columbus, Ohio.—p. 549.

Nature of Magnesium Tetany.—In a study of the syndrome of magnesium tetany, Greenberg and Tufts obtained results similar to those of Kruse, Orent and McCollum. The incidence, time of onset and duration of peripheral vasodilatation and hyperirritability in magnesium deficient rats were found to be greatly affected by the degree of magnesium deficiency, the starting age of the rats and the dietary levels of calcium and vitamin G. The lesion concerned with the hyperirritability appears to be in the midbrain or pons. This localization is supported by an increased sensitivity of the deficient animals to the convulsant action of picrotoxin and the protective action of subanesthetic doses of a barbiturate (sodium amytal) against convulsions. Magnesium tetany differs from calcium tetany in that curare does not prevent the onset of convulsive seizures in this condition.

American Review of Tuberculosis, New York

37: 259-368 (March) 1938

Statistical Basis of Errors in Immunity Tests. W. N. Berg.—p. 259.

Daily Variations in Tuberculin Reaction: I. Range of Variation in Tuberculous and Control Subjects. J. S. Howe, Chicago.—p. 264.

Id.: II. Relation to Vascular Pressor Episode. J. S. Howe, Chicago.—p. 273.

Possibility of Sensitization to Tuberculin. W. E. Nelson, A. G. Mitchell and Estelle W. Brown, Cincinnati.—p. 286.

Intracutaneous Tuberculin Reaction Associated with Calcified Intrathoracic Lesions. W. E. Nelson, A. G. Mitchell and Estelle W. Brown, Cincinnati.—p. 311.

*Diagnosis and Treatment of Tuberculous Tracheobronchitis. W. Warren, A. E. Hammond and W. M. Tuttle, Detroit.—p. 315.

Bronchial Factor in Cavitation. S. J. Shipman, San Francisco.—p. 336.

Progressive Primary Complex. O. Auerbach, Staten Island, N. Y.—p. 346.

Generalized Nodular Tuberculosis: Report of Case Associated with Primary Carcinoma of Lung. J. E. Welker and L. H. Leger, Kansas City, Kan.—p. 354.

Tuberculous Tracheobronchitis.—Warren and his associates review the types of lesions present in seventy-four patients with tracheobronchial tuberculosis found during the last twelve months. The ulcerative lesions fall into two types: the discrete ulcer and the granulating ulcer. The granulating type has occurred most commonly about the orifice of the main bronchi, on the carina and in the lower portion of the trachea. Healed and ulcerating stenosing lesions have been observed. The healed stenosis represents a healed ulcerative lesion in which the reparative process has partially or completely occluded the lumen. The ulcerostenosis represents a stage midway between the healed, cicatricial stenoses and the granulating ulcer. Tuberculoma or tuberculous granuloma has been observed in four patients. In three patients there was a diffuse hyperemia of the bronchial mucosa with moderate mucosal edema. There are no clearcut grounds for the assumption that this is a tuberculous lesion other than that in two patients the sputum was positive, although neither had a demonstrable lesion to account for the tubercle bacilli. Biopsies were performed in fourteen cases in which the lesion was large enough to obtain tissue safely for study. In four instances the lesions were tuberculomas and in ten were of the granulating ulcer type in which the growth of granulation tissue was great enough to obtain a bite. The specimens for biopsy obtained from the four patients in whom a tumor mass was present were all tuberculous granulomas. The remaining biopsies in cases in which a granulating ulcer was present showed tubercles in four of the ten cases. Up till now there has been no evidence that removing small pieces of tissue from these lesions has led to any untoward results. The danger of perforating the bronchial wall in these cases outweighs the value of the additional information obtained by biopsy. The authors are unable to render the rather severe prognosis which has been given heretofore. In the number of cases reviewed there have been six deaths. These have not been due to the tuberculous bronchial ulceration but to the severity of the parenchymal lesion. Bronchial ulceration may be in some instances a manifestation of poorly resisted disease, but this is not true in all cases. In some instances such lesions heal spontaneously; but, when they are treated early, healing occurs and leaves little or no trace; when the ulcer is old and deep, stenosis has already begun to develop and this is an irreversible process. It seems better to err on the side of performing a bronchoscopic examination on a patient with a normal bronchus when the diagnosis is in doubt than to leave the ulcer untreated.

Archives of Dermatology and Syphilology, Chicago

37: 373-548 (March) 1938

Xanthomatosis: Correlation of Clinical, Histopathologic and Chemical Studies of Cutaneous Xanthoma. H. Montgomery and A. E. Osterberg, Rochester, Minn.—p. 373.

*Lupus Erythematosus: Increased Incidence, Hematoporphyrinuria and Spectroscopic Findings. J. B. Ludy and E. F. Corson, Philadelphia.—p. 403.

Lupus Erythematosus of Conjunctiva. D. W. Montgomery, San Francisco.—p. 417.

Scleredema Adultorum (Buschke). S. E. Sweitzer and C. W. Laymon, Minneapolis.—p. 420.

*Serologic Evidence of Syphilis in Malarial Patients. H. H. Hazen, Washington, D. C.; F. E. Senear, Chicago; T. Parran, Washington, D. C.; A. H. Sanford, Rochester, Minn.; W. M. Simpson, Dayton, Ohio, and R. A. Vanderlehr, Washington, D. C.—p. 431.

Dermatitis Due to Cocobolo Wood. E. W. Abramowitz, New York, and W. B. Swarts, Philadelphia.—p. 441.

Mesenchymoma: New Type of Turban Tumor. E. B. Tauber, L. Goldman, Cincinnati, and C. Barrett, Lexington, Ky.—p. 444.

Pathogenesis of Noncaseating Epithelioid Tuberculosis of Hypoderm and Lymph Glands. L. G. Beinhauer and R. R. Mellon, Pittsburgh.—p. 451.

Cryptococcus Histolyticus Isolated from Subcutaneous Tumor. R. B. Dienst, Augusta, Ga.—p. 461.

Parapsoriasis en Plaques Disséminées and Incipient Mycosis Fungoides: Critical Review with Report of Illustrative Case. H. Keil, New York.—p. 465.

Lupus Erythematosus.—Ludy and Corson say that the incidence of lupus erythematosus in Philadelphia shows a decided increase during the last few years. The possibility that metallic poisons produce similar changes must be considered. Hematoporphyrin was noted in many patients with acute lupus erythematosus. This substance, acting as a photodynamic sensitizer, could readily account for dermal changes. Along with other danger signals, hematoporphyrinuria may take its place as a deterrent to the use of gold compounds in treating lupus erythematosus. The authors propose that in a susceptible subject, with a streptococcic toxemia or a tuberculous-pyogenic background, the presence of a porphyrin substance in the blood stream may engender photosensitivity and cause lupus erythematosus to appear as a result of exposure to light. In some cases a metallic element acting as a catalyst may be responsible for producing the same result. In all cases in which chronic dis-

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coid characteristics appear later there may have been a stage at which porphyrin was present. Porphyrin cannot be detected in abnormal quantities in the stationary stage. The presence of lead in the skin of every patient with lupus erythematosus that has been examined with the spectroscope seems more than coincidental and encourages further investigation of this aspect of the disease.

Serologic Evidence of Syphilis in Malarial Patients.—In June 1935 the committee on evaluation of serodiagnostic tests for syphilis first reported on the frequency of positive reactions among patients with malaria. In a study of 266 presumably unsyphilitic patients with malaria, Hazen and his collaborators obtained eighty-two positive (8 per cent) and fifty-one doubtful reports. Serologic examinations were repeated on forty-nine of the fifty-one donors who showed one or more positive reactions, with the result that there was a decrease of twenty-four in a total of eighty positive reports. Among sixty-eight specimens from eighteen white girls less than 10 years of age there were 13.2 per cent that were positive, the highest percentage in any age group except that from 60 to 69 years. Female subjects showed a higher percentage of positive results than did males. Such figures do not follow the usual trend of the prevalence of syphilis. There is a striking dissimilarity of positive reports for the different age groups. It seems safe to assume that malaria, like leprosy, can be the cause of positive serologic reactions to tests for syphilis. It is probable that more than one patient has been placed under treatment for syphilis when malaria was the cause of his positive serologic reaction.

Arkansas Medical Society Journal, Fort Smith

34: 203-230 (March) 1938

Clinical Types of Mastoiditis. H. W. Lyman, St. Louis.—p. 203.
Conservative Surgical Treatment of Duodenal Ulcer. H. W. Hundling, Little Rock.—p. 206.
The Applicability of Allergy to General Practice. C. H. Eyermann, St. Louis.—p. 210.

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Canadian Public Health Journal, Toronto

29: 53-102 (Feb.) 1938

Control of Tuberculosis in Rural Areas. R. M. Atwater, New York.—p. 53.
Food Purchases by Families in Edmonton and Lacombe, Alta. A. Stewart and W. D. Porter, Edmonton, Alta.—p. 58.
Arsenical Poisoning of a Large Family. J. Archambault.—p. 67.
The Public Health Nurse in Industry. Hazel A. Latimer, Hull, Que.—p. 74.
Practical Aspects of Community Mental Health. A. M. Doyle, Kingston, Ont.—p. 80.
Investigation of a Case of Undulant Fever. A. Jeannotte, Ville Marie, Que.—p. 86.

Endocrinology, Los Angeles

22: 291-410 (March) 1938

Thyrotropic Hormone and Antihormone Problem. S. C. Werner, New York.—p. 291.
*Serum Proteins Before and After Operations for Hyperthyroidism. R. B. Brown and P. M. Mecray, Philadelphia.—p. 302.
Sex Hormone Excretion of Children. R. B. Oesting and B. Webster, New York.—p. 307.
Is the Blood Calcium Level of Mammals Influenced by Estrogenic Substances? L. Levin and P. E. Smith, New York.—p. 315.
Observations on Quantitative Assay of Growth-Promoting Extract of Hypophysis. C. Chou, Chin Chang, G. Chen and H. B. Van Dyke, Peiping, China.—p. 322.
Biologic Effects of Thymus Extract (Hanson) on Thymectomized Rats: Overcorrection of Retardation in Growth and Development Incident to Thymectomy in Successive Generations of Rats. N. H. Einhorn, Philadelphia.—p. 335.
Biologic Effects of Thymus Implantation in Normal Rats: Accruing Acceleration in Rate of Growth and Development in Successive Generations of Rats Following Frequent Homologous Thymus Implants. N. H. Einhorn and L. G. Rowntree, Philadelphia.—p. 342.
Influence of Adrenalectomy on Sex Difference in Ketosis. E. M. MacKay and R. H. Barnes, La Jolla, Calif.—p. 351.
Criteria for Selection of Estrous Rabbits: Significance of Seasonal Factors. M. H. Friedman, Philadelphia.—p. 354.
Effect of Synthetic Androgen on Gonadotropic Potency of Anterior Pituitary. J. B. Hamilton and J. M. Wolfe, Albany, N. Y.—p. 360.
Chick Testis Weight Response to Gonadotropic Hormone. T. C. Byerly and W. H. Burrows, Washington, D. C.—p. 366.
Experimentally Induced Ovulation in Dwarf Mice. C. M. Osborn, Cambridge, Mass.—p. 370.

Serum Proteins in Hyperthyroidism.—Brown and Mecray studied the total serum proteins in twenty-four cases of hyperthyroidism (twenty-three of diffuse toxic goiter and one of toxic nodular goiter). In all cases the initial basal metabolic rate was +30 or above. Serum protein determinations were made preoperatively and mostly before any iodine was administered. Similar studies were made at intervals varying from three to twelve months after operation. In fourteen of the group the concentration of the serum proteins rose after operation in excess of the error of the method; in fifteen the preoperative level was below the accepted normal concentration. No relation was found between the preoperative serum protein levels and the duration of the symptoms of hyperthyroidism, and the same is true for the percentage increase of serum proteins after operation, with percentage weight gain. The mean increase in serum protein concentration was 13, 15 and 14 per cent in patients gaining up to 10, 20 and more than 20 per cent, respectively, of body weight following operation.

Ohio State Medical Journal, Columbus

34: 249-368 (March) 1938

Cardiovascular Syphilis. F. C. Clifford and A. P. James, Toledo.—p. 265.
Panhysterectomy. W. H. Weir, Cleveland.—p. 270.
The Physician-Patient Relation in Psychotherapy. T. A. Ratliff, Cincinnati.—p. 277.
Seasonal Variations in Incidence of Cardiovascular Disease, with Especial Reference to Respiratory Infections in Winter Months. W. H. Bunn, Youngstown.—p. 280.
Parietal Neuralgia. W. Bates, Philadelphia.—p. 283.
Treatment of Ringworm of the Feet. H. J. Parkhurst, Toledo.—p. 288.
Cystic Disease of Lung. W. H. Maddox, Wauseon.—p. 292.
Delivery Through Rectum of Extra-Uterine Fetus. C. C. Perry and J. Saltzman, Cleveland.—p. 296.
Diabetic Surgery. R. E. Pickett, Newark.—p. 299.
Rupture of Chordae Tendineae of Normal Mitral Valve: Case Report. R. W. Kissane and R. A. Koons, Columbus.—p. 303.

Review of Gastroenterology, New York

5: 1-114 (March) 1938

Food Idiosyncrasy as Factor of Importance in Gastro-Enterology and in Allergy. W. T. Vaughan, Richmond, Va.—p. 1.
Value of Medical Plan of Treatment in Intestinal Obstruction. A. L. Levin and M. Shushan, New Orleans.—p. 7.
Rational Treatment of Amebic Dysentery, with Especial Reference to Eradication of Parasite by Intracolonic Thermal Method. D. De Rivas, Philadelphia.—p. 15.
Clinical Aspects of Strongyloides Stercoralis Infection. E. H. Hinman, Wilson Dam, Ala.—p. 24.
Surgical Treatment of Duodenal Ulcer. L. R. Dragstedt, Chicago.—p. 34.
Meulengracht Treatment of Bleeding Peptic Ulcer. L. J. Boyd and M. Schlachman, New York.—p. 43.
Study of Occupational Adjustment of Patients with Peptic Ulcer. J. Meyer and Eleanor Scher, Chicago.—p. 54.
*Circumscribed Hypertrophic Proctitis. W. A. Fansler and J. K. Anderson, Minneapolis.—p. 64.
Radiation Therapy in Carcinoma of Anus, Rectum and Sigmoid Colon. I. Arons, New York.—p. 68.
Roentgen Findings in Some Gastrointestinal Lesions Producing Respiratory Symptoms. J. T. Farrell Jr., Philadelphia.—p. 79.

Circumscribed Hypertrophic Proctitis.—Fansler and Anderson discuss an inflammatory condition of the rectum which they have termed "circumscribed hypertrophic proctitis." The condition has been seen occasionally for many years but has been dismissed as an intractable proctitis. The distinctive characteristics are as follows: 1. A circumscribed area of inflammation of varying severity, frequently with hypertrophic change which may or may not involve the anal canal. The lesion extends upward for only 2 or 3 inches, where the area of inflammation changes abruptly to normal rectal mucosa. 2. The condition is extremely chronic in character, does not yield to the ordinary method of treatment and remains localized regardless of its duration. 3. Perirectal abscess and fistula are common complications. 4. Actual cauterization is the most successful method of treatment.

Rhode Island Medical Journal, Providence

21: 41-58 (March) 1938

The Stillbirth and Infant Mortality for Woonsocket, R. I. in 1936: Compared with Statistics for 1925. J. P. O'Brien, Woonsocket.—p. 41.

South Carolina Medical Assn. Journal, Greenville

34: 25-62 (Feb.) 1938

Meningococcic Meningitis: Analysis of 100 Cases. F. B. Johnson and J. E. L. Reveley, Charleston.—p. 25.
X-Ray Findings in Peptic Ulcer. C. Brown, Walterboro.—p. 32.
Summary of Wassermann and Kahn Testing Survey at the South Carolina Penitentiary. S. Simons, Columbia.—p. 34.
Studies Relating to Causes of Cancer and Therapeutic Applications Based on Them. J. C. McLeod and L. J. Ravenel, Florence.—p. 37.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Irish Journal of Medical Science, Dublin

No. **146:** 45-96 (Feb.) 1938

Health and the League. J. T. Wigham.—p. 45.
The Problem of Chronic Rheumatism. T. J. O'Reilly.—p. 55.
Postoperative Retention of Urine and Its Treatment. H. S. Barber.—p. 68.
Acute Appendicitis Complicating Uterine Inertia. J. S. Quin.—p. 88.

Journal of Anatomy, London

72: 181-322 (Jan.) 1938

Meninges and Cerebrospinal Fluid. L. H. Weed.—p. 181.
Exogenous Cellular Content of Neurohypophysis in Man Under Normal Conditions. H. J. Wade.—p. 216.
Technic for Operations on Hypothalamohypophysial Region of Rabbit. G. W. Harris and G. T. Popa.—p. 226.
*Further Remarks on Terminations of Nerves in Human Teeth. O. W. Tiegs.—p. 234.
Development of Pars Membranacea Septi in Human Heart. P. N. B. Odgers.—p. 247.
Early Stages of Replacement of Semilunar Cartilages of Knee Joint in Rabbits After Operative Excision. R. Walmsley and J. Bruce.—p. 260.
Effects of Prolonged Estrogenic Stimulation on Prostate of Rhesus Monkey. S. Zuckerman.—p. 264.
Effects of Male Hormone on Mature Castrated Rhesus Monkey. S. Zuckerman and A. S. Parkes.—p. 277.
Outline of Elliot Smith's Contributions to Neurology. H. H. Woollard.—p. 280.
Two Skulls with Absence of Premaxilla. D. E. Derry.—p. 295.
Anomalous Heart. G. I. Boyd.—p. 299.
External Characters of a Second Australian Fetus. F. Wood-Jones.—p. 301.

Terminations of Nerves in Teeth.—In a decalcified molar from a young human adult, stained by Bielschowsky's method, Tiegs has seen numerous nerves passing through the layer of odontoblast cells and entering the very narrow zone (subdentinal zone) between these and the calcified dentin. Here most of them run among Tomes' fibers as very delicate and often highly branched fibrils. Sometimes however, particularly in the crown of the tooth, fibers may fail to branch and remain in association with Tomes' fibers. In the crown, but not elsewhere, exceptionally coarse fibers have also been observed in the subdentinal zone. The nerves end on Tomes' fibers by distinct end organs. Sometimes a fiber may pass right through the subdentinal zone to the orifice of a dentinal tube, but such nerves have never been observed passing along the tubes; no evidence has therefore been obtained for the occurrence of nerves in the peripheral part of the dentin, which is said to be exceptionally sensitive. The anatomic arrangement is such as would be expected from Tomes' hypothesis that the fibers which bear his name conduct stimuli from the dentin to the nerves of the pulp.

Journal of Royal Army Medical Corps, London

70: 73-144 (Feb.) 1938

Coliform Bacilli and Water Supplies. E. F. W. Mackenzie and F. C. Hilton-Sergeant.—p. 73.
*Streptococcus Viridans in Urine. G. T. L. Archer.—p. 97.

Streptococcus Viridans in Urine.—Archer took cultures of the urine in thirty-four cases to discover whether the presence of Streptococcus viridans in the urine is of any pathologic significance. With one possible exception, absolute sterility was never found. Streptococcus viridans was present in pure culture in four cases, or 12 per cent, and with other organisms in ten cases, or 30 per cent. In nine of the cases catheter specimens were examined. Three of these were in addition to "sterile" specimens, while six were the only specimens examined in the cases concerned. Of the former, two were positive for Streptococcus viridans and one negative, Streptococcus viridans being isolated from "sterile" specimens in all three. Symptoms suggested disease of the urinary tract in fourteen of the thirty-four cases and Streptococcus viridans was isolated from eight. Only six of the remaining twenty cases without definite history of urinary symptoms gave positive cultures for these organisms; of four healthy controls three yielded a positive result; cultures from five patients convalescing from gonorrhea taken following urethral irrigation were all negative for Streptococcus viridans, though Streptococcus faecalis was isolated in three cases; and four of seven patients produced positive cultures both before and after dental extractions, there being no relationship between positive blood and urine cultures for Streptococcus viridans in this series. The habitat of these organisms is probably the urethra, though animal experiment suggests that in the event of a massive invasion of the blood stream they may be passed in the urine. Streptococcus viridans in the urine is without pathologic significance.

J. Royal Inst. Public Health and Hygiene, London

1: 249-314 (Feb.) 1938

Diet and the National Health. W. Langdon-Brown.—p. 259.
Hydrologic Methods Employed in Treatment of Cripples at Alton and Hayling Island. H. Gauvain.—p. 276.
The Spa as a National Asset in the Maintenance of Physical Fitness. J. Fenton.—p. 283.
*Treatment of Arthritis and Injuries of Joints by Hydrotherapy. W. S. C. Copeman.—p. 287.
Hydrologic Treatment of Diseases of the Joints. F. G. Thomson.—p. 291.
The Spa as a National Asset in the Maintenance of Physical Fitness. G. R. P. Aldred-Brown.—p. 298.
Etiology of Rheumatism in Childhood. F. J. Poynton.—p. 302.

Arthritis and Hydrotherapy.—Copeman believes that no patient having true rheumatoid (atrophic) arthritis in any active phase should ever be treated by hydrotherapy. The skin and joints are sensitive to movement and to temperature, and the patients possess no general reserve. The only effect generally produced is an intense general fatigue and an increase in the activity of the disease. A further contraindication is found in patients whose joints are in the acute or subacute stage of inflammation; active infective arthritis should therefore never be treated by hydrotherapy, whatever its etiology.

Journal of Tropical Medicine and Hygiene, London

41: 37-52 (Feb. 1) 1938

Proteins of Cholera Organisms and Related Species. B. N. Mitra.—p. 37.
*Defensive Role of Bilirubinemia in Typhoid Infections. Najib-Farah.—p. 40.
Diseases of Skin in Negroes. L. J. A. Loewenthal.—p. 41.

41: 53-68 (Feb. 15) 1938

Further Contribution to Proposal of New Classification of Trypanosomes. I. Jacono.—p. 53.
Pathologic Lesions Met With in Aborigines of Diamantina District in the Northeast of South Australia. J. B. Cleland.—p. 57.
Diseases of the Skin in Negroes. L. J. A. Loewenthal.—p. 58.

Defensive Role of Bilirubinemia in Typhoid Infections.—Najib-Farah examined the blood in thirteen cases of typhoid or paratyphoid. He found that in every case, on repeated examination during the course of the illness and in spite of the enlargement of the spleen and the liver and the toxic typhoid state, the plasma of these patients contained low concentrations of bilirubin—from 0.05 to 0.25 mg. per hundred cubic centimeters, when one would expect to find abnormally high values. These concentrations were found later, on complete recovery, to resume higher levels from 0.3 to 0.8 mg. per hundred cubic centimeters. Rabbit serum does not contain bilirubin, explaining perhaps why this animal is refractory to typhoid. Experiment showed that bilirubin increased the virulence of typhoid organisms in the rabbit, tending to disease and death of all rabbits experimented on, the typhoid bacillus being recovered from the blood and organs of the dead animals. Bilirubinemia is suggested as a factor in the processes of defense and immunity. The variability of plasma bilirubin concentration in health and disease may possibly suggest the existence in the organism of some mechanism of control over bilirubin production, so that bilirubin formation is constantly varying according to the nature of an invading organism to be overcome.

South African Medical Journal, Cape Town

12: 71-110 (Feb. 12) 1938

Diverticulum of the Hypopharynx. P. G. Gerlings.—p. 73.
Social Medicine. C. Lundie.—p. 77.
Surgical Aspect of Toxic Goiter. R. L. Almond.—p. 79.
Treatment and Prognosis of Toxemias of Pregnancy, with Especial Reference to Future Pregnancies. J. Black.—p. 88.

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Archives des Maladies du Cœur, Paris

31: 173-284 (Feb.) 1938

Fetal Heart Sounds in Utero: Phonocardiographic Study. C. Lian and V. Golblin.—p. 173.
Effect of Irradiation of Carotid Sinus on Arterial Tension. F. van Dooren and G. Melot.—p. 178.
Protein Equilibrium in Patients with Cardiac Disorders. A. Lazaris. —p. 204.
*Electrocardiographic Disturbances in Course of Acute Nephritis. A. Garreton Silva, L. Hervé, F. Noguès and L. G. Forero.—p. 217.

Electrocardiographic Disturbances in Acute Nephritis.—Garreton Silva and his associates studied thirty-six cases of acute nephritis and analyzed the disorders in the electrocardiograms. Some types of acute nephritis present the aspects of cardiac insufficiency, characterized by great cardiac dilatation and by the frequent apparition of acute pulmonary edema. The electrocardiogram is nearly always deformed and the modification of its complexes is strictly parallel to the severity and the development of the cardiac symptoms. The most prominent alterations of the electrocardiogram involve the space between S and T and the T wave. In acute glomerular nephritis there are no disturbances in the intracardiac conduction. The electrocardiographic changes, no matter how severe, disappear gradually as the disease is cured. Usually no traces remain at the end of four or six weeks. The cardiac disturbances are the result of a profound modification of the metabolism of the cardiac fibers. Vascular spasm, arterial hypertension, venous repletion and the infection causing the nephritis are the factors responsible for the cardiac insufficiency.

Bulletin de l'Académie de Médecine, Paris

119: 267-294 (March 8) 1938. Partial Index

Pulmonary Abscess and Tuberculosis. F. Bezançon, R. Azoulay, P. Bernal and C. Brunet.—p. 277.
*Attempt at Resection of First Ganglions of Thoracic Sympathetic in Pulmonary Tuberculosis. H. Gaudier.—p. 284.

Resection of Sympathetic Ganglions in Pulmonary Tuberculosis.—Gaudier describes the first results of the resection of the second and third thoracic ganglions, which he performed in patients with pulmonary tuberculosis. His method is a modification of the method described by Alvarez, the ganglions being approached by the dorsal route. Great care should be exercised in the dissection. Dissection of the ganglions and of the nervous ramifications is done by means of a grooved director; then follows anesthetic infiltration and resection of the two or three ganglions, careful hemostasis, without drainage, and deposition of fragments of the resected bones. This intervention does not produce the slightest deformity of the thoracic skeleton. The author describes two cases. This method is accompanied by anatomic modifications which appear to influence favorably the pulmonary parenchyma. Experience may perhaps extend the indications for this treatment to bronchial dilatation or abscess. The resection involves little shock. It should have a place beside the interventions already in practice, the end strived for being the same: pulmonary immobilization and cicatrization.

Schweizerische medizinische Wochenschrift, Basel

68: 257-280 (March 12) 1938. Partial Index

Hypertrophy of Prostate in General Practice. H. Heusser.—p. 257.
*Autohemotherapy in Treatment of Arterial Hypertension. P.-E. Perret. —p. 265.
Pneumatization of Bone of Face in Diseases of Crouzon and of Apert and in Oxycephaly. P. de Gunten.—p. 268.

Autohemotherapy in Treatment of Hypertension.—Perret describes his experience with this measure in twenty cases, selected from among eighty cases. He gave ten or fifteen injections of 10 cc. each, at intervals of three or four days. In the seven cases in which relapses ensued, he gave a second series of ten injections of 20 cc. each, at the same intervals. Autohemotherapy of hypertension exerts favorable effects on the subjective symptoms. The patients regain their strength and sleep better, and their memory improves. Variations in the arterial tension, however, did not always parallel the subjective improvements; in some the tension was not at all influenced. The duration of the ameliorations following the first series of autohemotherapy varied. In one fourth of the patients the improvement lasted from one to two months, in one half from three to four months and in the other fourth from five to ten months. In the seven cases in which the series of injections was repeated, the amelioration was usually of shorter duration after the second than after the first series.

Lotta Contro La Tubercolosi, Rome

8: 1005-1096 (Nov.) 1937

Antituberculous Preventive Vaccine. G. Petragnani.—p. 1005.
Tuberculous Ultravirus. G. Petragnani.—p. 1008.
*Research of Tubercle Bacillus in Gastric Secretion of Children. U. Monaco and L. Di Vito.—p. 1011.
Value of Roentgenkymography Applied to Study of Pleural Adhesions. G. Torelli and B. Besta.—p. 1028.
Tuberculosis and Dementia Praecox. M. Benvenuti and A. Benvenuti. —p. 1040.

Tubercle Bacilli in Gastric Secretion.—Monaco and Di Vito's researches on tubercle bacilli in the gastric secretion of children are carried out as follows: The patients with a fasting stomach ingest 50 or 100 cc. of warm water, and then a small Nelaton catheter is introduced into the stomach. The catheter induces vomiting, and the vomitus is collected in sterile Petri dishes. If microscopic examination of the gastric secretion, obtained by vomiting, gives negative results, cultures by Petragnani's technic are prepared and guinea pigs inoculated with 1.5 cc. of the gastric secretion. The cultures are ready in eight days and, if positive, they are verified by the necropsy of one of the guinea pigs. The authors studied sixty-eight children hospitalized in an antituberculosis center and suffering from various forms of pulmonary, lymphatic-nodular or pleural tuberculosis. All had a positive intradermal or cutaneous reaction to tuberculin. They did not expectorate. Tubercle bacilli showed at microscopic examination in four cases, by the cultural and biologic tests in twelve cases and by the biologic test alone in nine cases. The tests gave negative results in forty-three cases. The authors point out the importance of the examination of the gastric secretion in children and adults who do not expectorate.

Riforma Medica, Naples

54: 215-252 (Feb. 12) 1938

*Significance of Results of Tolerance Test in Some Blood Diseases. P. De Lucia and D. De Matthaeis.—p. 215.
Livedoid Dermatitis: Case. M. Bronzini.—p. 222.
Quincke's Edema From Administration of Quinine: Importance of Some Endocrine Glands in Intolerance. M. Cahane and T. Cahane.—p. 227.

Tolerance to Galactose in Blood Diseases.—De Lucia and De Matthaeis state that the tolerance to galactose is increased in patients suffering from various blood diseases, including pernicious anemia. The increased tolerance is shown by the behavior of galactose in the blood during the tolerance test. Agalactosuria, which exists during the test, is of no significance, as it may exist also in the course of other diseases. The increased tolerance to galactose is frequent in pernicious anemia and less frequent in hemolytic jaundice, leukemic myelosis and anemia from ancylostoma. The results of the test are of no significance for the differential diagnosis of pernicious anemia.

Klinische Wochenschrift, Berlin

17: 289-328 (Feb. 26) 1938. Partial Index

Vitamin B_1 Content of Human Milk and Its Modification by Diet. W. Neuweiler.—p. 296.
*Changes in Electrocardiogram in Patients with Brain Tumor. R. Aschenbrenner and G. Bodechtel.—p. 298.
*Cevitamic Acid Content in Cerebrospinal Fluid of Human Subjects. J. Mélka and Z. Klimo.—p. 302.
Paratyphoid B Meningitis in Nursling. B. Schmidt.—p. 303.
Severest Photodermatoses on Basis of Isolated, Pathologic Formation of Porphyrin in Intestine as Result of Dysbacteria and Hepatopathy. E. Urbach.—p. 304.
Syphilitic Mediastinitis: Case. K. Unser.—p. 310.
*Diabetes Mellitus and Blood Pressure. S. Donhoffer and T. Szabó. —p. 312.
Treatment of Bronchial Asthma During Childhood. E. Püschel.—p. 313.

Electrocardiogram of Patients with Brain Tumor.—Aschenbrenner and Bodechtel say that the central gray matter, from the lamina terminalis of the third ventricle to the calamus scriptorius of the fourth ventricle, regulates the vegetative functions. The authors give attention to regulation of the cardiac activity by centers in this region. In the last two years they have made electrocardiographic studies on fifty patients with brain tumors. They analyze the observations made on children between 5 and 15 years of age and on one adult aged 24. In such young persons, vascular diseases, the most frequent cause

of myocardial changes, can be excluded. The electrocardiographic changes consisted of extrasystolic and other disturbances in the rhythm and in changes in the intermediate portion of the electrocardiogram. Animal experiments and clinical observations, often corroborated by necropsy, show that the electrocardiographic changes are of central origin. By irritation of the sympathetic centers of the paramedian central gray substance, disturbances in the cardiac rhythm and in the cardiac blood perfusion can be elicited by way of the long cardiac nerves as well as by way of the descending tracts and of the spinal parasympathetic. In patients with brain tumors but with normal hearts such centrally elicited disturbances in the cardiac activity may dominate the clinical picture.

Cevitamic Acid Content of Cerebrospinal Fluid.—Mélka and Klimo say that efforts to utilize deviations in the cevitamic acid content of the cerebrospinal fluid as a diagnostic aid in diseases of the central nervous system have failed. On the other hand, low cevitamic acid content of the cerebrospinal fluid is the manifestation of a C hypovitaminosis. The authors studied the cevitamic acid content of the cerebrospinal fluid in the course of an entire year to be able to estimate the influence exerted by the food during the different seasons. They made systematic studies for thirteen successive months in 277 cases. Some of the specimens of cerebrospinal fluid were from normal subjects and some were from patients with disorders of the central nervous system. Since in both groups the values were often low and normal values were often found in patients with severe disorders of the central nervous system, it was concluded that the detected values were of no diagnostic significance. However, there were seasonal fluctuations of the cevitamic acid content of the cerebrospinal fluid. The minimum was detected during the spring months, the maximum during the fall. The authors conclude that the cevitamic acid content of the cerebrospinal fluid is an important diagnostic aid in the diagnosis of hypovitaminosis.

Diabetes Mellitus and Blood Pressure.—Donhoffer and Szabó's observations on 420 patients with diabetes and on a large policlinical material convinced them that there is no difference in the incidence of hypertension in diabetic persons and in those without this metabolic disorder. Moreover, as regards insulin requirements and mortality, they found no difference between diabetic patients with or without hypertension.

Münchener medizinische Wochenschrift, Munich

85: 273-312 (Feb. 25) 1938. Partial Index

Early Orthopedic Treatment of Poliomyelitis. M. Lange.—p. 273.
Early Detection of Pulmonary Tuberculosis. R. Griesbach and A. Wieda. —p. 277.
*Experiences with Havlicek's Method of Reinjecting Patient's Own Blood Following Its Irradiation with Ultraviolet Rays. S. Litzner.—p. 280.
Nontuberculous Pulmonary Disease with Tuberculosis-like Roentgenogram. R. Schoen and W. Naumann.—p. 287.
Roentgenograms of Lung Difficult to Interpret. K. Patschkowski.—p. 292.
*Clinical Aspects and Pathology of Cardiac Hemoptysis Not Caused by Infarct. H. U. Guizetti and G. Dinkler.—p. 295.

Reinjection of Irradiated Blood.—Litzner cites the method of autohemotherapy introduced by Havlicek, which differs from ordinary autohemotherapy in that the blood is subjected to ultraviolet irradiation. The authors begin with from 6 to 8 cc. of blood, to which is added about one tenth of that quantity of 3.8 per cent sodium citrate solution. The first time they irradiate the blood for one-half minute and subsequently increase the time by one-half minute each time until a total of five minutes has been reached. Usually the injections were given two or three times weekly until from fourteen to eighteen injections had been reached; in other cases, daily injections were given for eight days and after that injections were given twice each week. The mode of injection was always intramuscular. Improvement generally became noticeable after five or six injections. Noteworthy is the improvement in the general condition and in the analgesic action, especially in arthritis deformans. In chronic infectious rheumatism the injection of the patient's own irradiated blood is of no special value. However, Havlicek's autohemotherapy was effective in acute or subacute articular rheumatism. Acute allergic diseases of the skin reacted promptly to the injections. In the conclusion he says that reinjection of irradiated blood involves no dangers and can be used with good results in some arthritic and allergic disorders.

Cardiac Hemoptysis.—Guizetti and Dinkler say that it is not so well known that pulmonary hemorrhages may develop in severe cardiac pulmonary stasis without the presence of infarcts. They describe six cases of their own. Stasis in the lesser circulation with increase in pressure (usually on the basis of mitral stenosis) leads, in case of a strong, not decompensated right side of the heart, to diapedesis in the region of the alveolar or bronchial capillaries or where these pass into the venous pulmonary region. The hemorrhages appear probably simultaneously at several sites and assume a profuse character. The treatment of these pulmonary hemorrhages is of little avail. Sedatives and rest in bed should be employed. Blood transfusion is contraindicated. The authors resorted to venesection in order to relieve the pulmonary stasis. They advise against the use of digitalis, strophanthin and similar cardiac remedies.

Wiener klinische Wochenschrift, Vienna

51: 225-256 (Feb. 25) 1938. Partial Index

Convulsions During Childhood. F. Hamburger.—p. 225.
Short Wave Treatment in Gynecology. V. Föderl.—p. 229.
*Severe Rhythmic Disturbances of Heart Elicited by Irritation of Oral and Pharyngeal Mucosa. C. V. Medvei and H. Uiberall.—p. 234.
Treatment of Patient with Pemphigus by Means of Active Immunization and Contents of Pemphigus Bullae. A. E. H. Binger.—p. 237.
Electrical Accidents. E. Körmöczi.—p. 238.
Electrical Accidents. S. Jellinek.—p. 239.

Cardiac Rhythm Affected by Irritation of Oral Mucosa.—Medvei and Uiberall report the case of a woman aged 62 who, following follicular tonsillitis, developed piercing pains in the left side of the neck during the swallowing of food. The attacks lasted only a few seconds, then gradually subsided and remained absent for a year, then recurred. Anesthetization of the pharyngeal mucosa produced cessation of the attack for a time. Later the attacks recurred whenever food touched the left palatine arch or the left pharyngeal wall. When pressure is applied on this region the patient feels pain in the left ear, becomes pale and loses consciousness, the head and eyeballs turn to the right, the pupillary reactions are abolished and bradycardia occurs, pulsation decreases and clonic spasms are noticeable. The attack lasts from sixty to ninety seconds. Electrocardiographic studies revealed disturbances in the cardiac rhythm. During some of the attacks a nodal rhythm could be observed. The authors think that the disturbance in the cardiac rhythm and the accompanying loss of consciousness are doubtless of neurogenic origin and that they are elicited by way of the vagus nerve. The patient had a primary impairment of the cardiac muscle and a hypertension. Radium irradiation of the oral and pharyngeal mucosa stopped the attacks.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

82: 969-1060 (Feb. 26) 1938. Partial Index

Pasteurella Avicida in Purulent Sputum of Patient with Chronic Bronchiectasis. J. Mulder and A. De Boer.—p. 977.
*Treatment of Hemangiomas by Means of Borderline Rays. P. Dethmers. —p. 983.
Insulin and Metrazol Treatment in Schizophrenia. G. W. Kastein.—p. 991.
Total Extirpation of Thyroid in Angina Pectoris. L. Schaap and S. M. Kropveld.—p. 996.
Treatment of Skin Diseases of Nervous Etiology. M. E. Polano.—p. 1001.

Treatment of Hemangiomas by Means of Borderline Rays.—Dethmers decided to apply from 800 to 1,000 roentgens per application and 8,000 roentgens in all, at intervals of six weeks. The current strength was 20 milliamperes, the tension 10 kilovolts and the focus-skin distance 10 cm. He employed this form of borderline treatment in sixty-one cases of hemangioma, of which twenty were cases of naevus flammeus and forty-one were tuberous hemangiomas. He gained the impression that the dosage was in some instances too small for naevus flammeus, but it was adequate for tuberous hemangiomas. The location seemed to be of no importance in tuberous hemangioma, but in naevus flammeus a localization on the face had a less favorable prognosis than on other parts of the body. The possibility of obliteration by pressure indicates a favorable prognosis in case of nevi as well as of tuberous hemangiomas. The age of the patient is important in that the prognosis becomes more unfavorable with increasing age. About 50 per cent of the cases of naevus flammeus, which are so feared for their refractory character, respond to the described treatment by means of borderline rays.

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